SUPPLEMENTAL DESIGN REPORT
AREA 3, AREA 5, NEW SMELTER SLAB AREA, AND CONCRETE

AND
CONTRACT DOCUMENTS
(INCLUDING SPECIFICATIONS AND DRAWINGS)

FOR
SUPPLEMENTAL REMEDIAL ACTION
AT
OUTBOARD MARINE CORPORATION PLANT 2 SITE
WAUKEGAN, ILLINOIS

Prepared for

U.S. Environmental Protection Agency
Region 5
Chicago, Illinois

Prepared by

SulTRAC

Chicago, Illinois

September 2011

SulTRAC

September 16, 2011

Mr. Kevin Adler
Project Manager
U.S. Environmental Protection Agency (EPA) Region 5
77 W. Jackson Blvd.
Chicago, Illinois 60604

Subject: **Supplemental Design Area 3, Area 5, New Smelter Slab Area and Concrete and Specifications for Supplemental Remedial Action**
Outboard Marine Corporation (OMC), Plant 2 Site
Waukegan, Lake County, Illinois
Remedial Action Contract (RAC) 2 EP-S5-06-02
Work Assignment No. 053-RARA-0528

Dear Mr. Adler:

SulTRAC is enclosing a copy of the Supplemental Design Area 3, Area 5, New Smelter Slab Area and Concrete Report for your review. In addition, enclosed are the Specifications for the Supplemental Remedial Action for your review. Copies of the report and the specifications have also been forwarded to CH2M Hill and the Illinois Environmental Protection Agency (IEPA) as requested.

If you have any questions, please call me at (312) 201-7474.

Sincerely,

Tom Hahne
Project Manager

Enclosure

cc: Darlene Hainer, EPA Contracting Officer (letter only)
Mindy Gould, SulTRAC Program Manager (letter only)
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REMEDIAL ACTION CONTRACT 2
FOR REMEDIAL, ENFORCEMENT OVERSIGHT, AND
NON-TIME CRITICAL REMOVAL ACTIVITIES
IN REGION 5

SUPPLEMENTAL DESIGN
AREA 3, AREA 5, NEW SMELTER SLAB AREA, AND CONCRETE
OUTBOARD MARINE PLANT 2 SITE
WAUKEGAN, ILLINOIS

Prepared for
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604

Date Submitted:	September 16, 2011
USEPA Region:	5
Work Assignment No:	167-RARA-0528
Contract No:	EP-S5-06-02
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ACRONYMS AND ABBREVIATIONS

ARAR	Applicable or Relevant and Appropriate
CCDD	Clean construction and demolition debris
CFR	Code of Federal Regulations
CPAH	Carcinogenic polynuclear aromatic hydrocarbon
DNAPL	Dense, non-aqueous phase liquid
ELCR	Excess Lifetime Cancer Risk
EPRI	Electric Power Research Institute
FS	Feasibility study
HI	Hazard Index
IEPA	Illinois Environmental Protection Agency
IDNR	Illinois Department of Natural Resources
MSL	Mean sea level
NAAQS	National Ambient Air Quality Standard
NPL	National Priorities List
ODC	Old Die Cast
OMC	Outboard Marine Corporation
OU	Operable unit
PCB	Polychlorinated biphenyl
PM 10	Particulate matter 10 microns or less
RA	Remedial action
RAC	Remedial action contract
RAO	Remedial Action Objectives
RG	Remediation goal
RI	Remedial investigation
ROD	Record of Decision
SD	Supplemental Design
sq. ft.	Square feet
TACO	Tiered Approach to Remedial Action Cleanup Objectives
TCE	Trichloroethylene
Tetra Tech	Tetra Tech EM Inc.
TSCA	Toxic Substances Control Act
USEPA	United States Environmental Protection Agency
WA	Work assignment

1.0 INTRODUCTION

SulTRAC prepared this supplemental design (SD) as part of the remediation activities specified for the Outboard Marine Corporation (OMC) Plant 2 Site in Waukegan, Lake County, Illinois, under U.S. Environmental Protection Agency (USEPA) Remedial Action Contract (RAC) 2 for Region 5, Contract No. EP-S5-06-02, Work Assignment (WA) No. 167-RARA-0528. The SD has been prepared as a supplement to the previous design documents prepared by CH2M Hill for USEPA, *Basis of Design Report, Final Design for Remediation of Soil, Sediment, and Building Media...* (CH2M Hill 2008) and "Addendum to the Basis of Design Report, Final Design for Remediation of Soil, Sediment, and Building Media..." (CH2M Hill 2009). The purpose of this SD is to present the approach and assumptions, implementation strategy, and schedule for additional soil and sediment remedial action (RA) at the OMC Plant 2 Superfund Site. The activities described in the original design documents have been substantively completed, except for the following: (1) Area 5 restoration activities are incomplete because of discovery of contamination in that area not specified in design documents; (2) two other areas—Area 3 (the North Ditch) and Area 4—were remediated to the design depth, but confirmation sampling and supplemental investigation identified additional contamination; (3) the New Smelter Slab Area, on the eastern part of the site, has soil contamination discovered during remediation activities. The additional data gathered during remediation activities has been incorporated into this document. Further remediation is required to address the contamination.

The SD has been formatted to the same major section headings and references as the Basis of Design Report and Addendum to the Basis of Design Report, where appropriate, and includes the following sections:

- Introduction
- Remedial Design Components
- Design Approach, Assumptions, and Parameters
- Project Delivery Strategy
- Compliance with Applicable or Relevant and Appropriate Requirements (ARAR)
- Construction Schedule
- Cost Estimate
- Biddability, Constructability, and Operability Review
- *References.*

Design specifications and drawings accompanying this report are bound as separate submittals.

2.0 SITE DESCRIPTION AND HISTORY

This section describes the OMC Plant 2 site and summarizes the site's operational history, as well as previous actions at the site. A more detailed discussion of site background information is in the remedial investigation report (CH2M Hill 2006a).

2.1 SITE DESCRIPTION

Located at 90 East Seahorse Drive in Waukegan, Illinois, about 40 miles north of Chicago, the OMC Plant 2 site is the fourth of four operable units (OU) of the OMC site on the National Priorities List (NPL). The OMC site also includes the Waukegan Harbor site (OU 1), the Waukegan Manufactured Gas and Coke Plant ("Waukegan Coke Plant") site (OU 2), and the Polychlorinated Biphenyl (PCB) Containment Cells (OU 3). Figure 1 shows the location of the OMC Plant 2 site.

2.2 SITE HISTORY

The OMC Plant 2 site is a 60-acre lakefront parcel containing an abandoned, 1,060,000-square-foot industrial facility in which OMC made outboard motors from about 1948 until 2000. OMC was the world's largest manufacturer and supplier of outboard motors, and second largest producer of powerboats. The facility used hydraulic and lubricating oils containing PCBs in its production lines from 1961 until 1972, and routinely discharged some of the fluids via sewer lines into Waukegan Harbor, thereby becoming the source of very high-level PCB contamination in harbor sediment. OMC also operated several vapor degreasers at the OMC Plant 2 facility to clean newly made parts with trichloroethylene (TCE). Leaking degreasers and TCE storage tanks over the years created a TCE groundwater contaminant plume and a dense, non-aqueous phase liquid (DNAPL) plume beneath the OMC Plant 2 site.

OMC declared bankruptcy in December 2000 and ceased all manufacturing operations in August 2001. Much of the OMC site is now owned by the City of Waukegan (City).

SulTRAC initiated asbestos abatement and demolition of the existing buildings in spring 2010. Following removal of Plant 2 structures, SulTRAC started remediation of the slab and subslab of Plant 2, and soil or sediment remediation in defined Remediation Areas. Remediation activities have been substantively completed in the Plant 2 Area and in the defined Remediation Areas. Exceptions include

the Smelter Building Area, Area 5, and the North Ditch. Figure 2 shows the status of excavation activities.

2.3 OTHER PREVIOUS SITE INVESTIGATIONS

USEPA began a remedial investigation (RI) at the OMC Plant 2 site in 2004 to determine the nature and extent of contamination in site groundwater, sediment, soil, and within the OMC Plant 2 building. USEPA issued the *Remedial Investigation Report [for] OMC Plant 2...*, presenting results of the study and a human health and ecological risk assessment in April 2006 (CH2M HILL 2006a). USEPA began a feasibility study (FS) in 2005 to examine site cleanup alternatives designed to protect human health and the environment, and issued the *Feasibility Study Report [for] OMC Plant 2...* in December 2006 (CH2M HILL 2006b).

USEPA shared the preliminary RI findings with the City in early 2006, and the City quickly responded by hiring a contractor to demolish the nearly 400,000 square feet (sq. ft.) of uncontaminated structures down to the concrete slabs beginning in August 2006. Metals were reclaimed for recycling, and the remaining debris was hauled off site and disposed of at a licensed municipal waste landfill. The City, by agreement with USEPA, moved PCB-containing electrical transformers from this area into a storage room in the contaminated building, and then USEPA disposed of these and almost all other PCB-containing transformers off site at a licensed facility in January 2007. Removal and disposal of one large PCB-containing transformer that remained on the roof of the contaminated building occurred during the final building cleanup action in 2010.

2.4 REMEDIAL ACTION PLAN

USEPA completed the RI/FS at the site in December 2006 and issued a proposed plan fact sheet for cleanup of the OMC Plant 2 site in December 2006, with a comment period ending in February 2007.

USEPA has identified four media of concern in which chemical contaminants may exceed human health or ecological risk-based cleanup levels at the OMC Plant 2 site. The media are (1) soil and sediment, (2) OMC Plant 2 building materials, (3) groundwater, and (4) DNAPL.

The proposed plan presented the recommended remedy for the PCB- and carcinogenic polynuclear aromatic hydrocarbon (PAH)-impacted building media, and notes the initiation of pilot-testing of cleanup methods for the groundwater and DNAPL.

Upon review of public comments on the proposed plan, USEPA issued a Record of Decision (ROD) for the cleanup of the soil and sediment and building media in September 2007.

2.5 REMEDIAL ACTION OBJECTIVES AND GOALS

The remedial action objectives and goals are discussed in detail in Section 1.3 of the CH2M Hill "Addendum to the Basis of Design Report..." (CH2M HILL 2009). These are briefly discussed in this section.

The remediation objectives included removal and remediation of the building materials, the slab, and subslab soil contamination. The remedial action objectives (RAO) for this phase of remediation included:

- Prevention of trespasser and future industrial user exposure to PCBs through ingestion or inhalation on building surfaces that exceed an excess lifetime cancer risk (ELCR) of 1 in 100,000 to 1 in 1,000,000
- Removal of the building and concrete slab, as necessary, to allow site remediation
- Prevention of residential or construction worker exposure through contact with, ingestion of, or inhalation of contamination in soil adjacent to (within 20 feet) and beneath the concrete slab that presents a hazard index (HI) exceeding 1 or an ELCR exceeding 1 in 100,000 to 1 in 1,000,000.

The CH2M HILL addendum to the design indicated that removal of concrete slab and underlying soil was not necessary in uncontaminated portions of the plant which included the Former Smelter Building, Die Cast Area, and Corporate Building areas. Further, the City was responsible for demolition of these structures and redevelopment within those areas.

The findings of SulTRAC's remediation suggested presence of contamination in the soil underlying concrete on the eastern portion of the site, including the Former Smelter Building and Die Cast Area. These soils were remediated in accordance with the design specifications to meet RAOs. However, additional soil contamination and concrete present in these areas will be addressed as part of this supplemental design to meet RAOs.

Remediation objectives were also specified for soil and sediment outside of the OMC Building 2 footprint. These included:

- Prevention of residential or future industrial user exposure to PCBs through ingestion or inhalation on building surfaces that exceed an ELCR of 1 in 100,000 to 1 in 1,000,000.
- Prevention of erosion and off-site transport of soils contaminated at concentrations posing unacceptable risk to recreational users (i.e., HI exceeding 1 or ELCR exceeding 1 in 100,000 to 1 in 1,000,000.

Finally, RAOs were established for PCB-impacted soils that could affect recreational users in the off-site Dune Area east of the site. The Ecological Risk Assessment included in the RI found that in a future development scenario, created habitats in areas of high carcinogenic polynuclear aromatic hydrocarbons (CPAH) and PCBs could pose ecological risks. However, because the off-site Dune Area east of the site was included within the area to be remediated to meet RAOs for human health criteria, specific ecological RAOs were not required. RAOs for the Dune Area addressing human health criteria include:

- Prevention of recreational human user exposure through contact with, ingestion of, or inhalation of contaminated soil that presents a HI exceeding 1 or an ELCR exceeding 1 in 100,000 to 1 in 1,000,000.
- Prevention of erosion and off-site transport of soils contaminated at concentrations posing unacceptable risk to recreational users (i.e., HI exceeding 1 or ELCR exceeding 1 in 100,000 to 1 in 1,000,000.

Data from confirmation sampling and supplemental investigation conducted during the remedial action identified additional contamination in the Dune Area and North Ditch that will be addressed as part of this supplemental design to meet RAOs.

2.6 OVERALL DESCRIPTION OF THE OMC PLANT 2 PROJECT

A detailed description of the overall project is provided in Section 1.4 of the CH2M HILL addendum (CH2M HILL 2009). This section briefly describes the work completed to date and the remaining activities that are the focus of this supplemental design.

Remediation of the Plant 2 Building, slab, and subslab soil was substantively completed in July 2011. RAOs were met in soil above the groundwater table. Residual contamination is still present below the water table at some areas of the building slab, particularly on the western side of the site in the Old Die

Cast (ODC) area, where soil exceeding Toxic Substances Control Act (TSCA) criteria is present. Excavation of this material was not within the scope of the original design specifications, which required remediation to the water table only. Elsewhere throughout the building slab, TSCA soils were addressed and soils were remediated to meet RAOs or were excavated below the water table. One exception is the remaining Trim Building Slab, which was left in place for use as part of the related Waukegan Harbor sediment remediation project.

Remediation activities were completed in the North Ditch (Area 3) to the design depth of 577 feet mean sea level (MSL). Confirmation sampling of the sediment after remediation and supplemental sampling activities (SulTRAC 2011a) identified residual sediment contamination that exceeded the RAOs established for the site. This sediment contamination also was found to extend off the site to the east, an area not included in the CH2M HILL design or design addendum. Because the RAOs established in the design and design addendum included those related to recreational users and sediment erosion, this material will be addressed by capping on site and removal off site, as described in this supplemental design to meet RAOs.

Remediation activities were completed within Area 5 (the Dune Area) to the extent prescribed in the design. Contamination was identified on the northern and western margins of the excavation, including contamination near the Eastern Containment Cell on the west and the Dune Area on the east. Supplemental investigation also identified contamination to the north and east of Area 5. This design addendum addresses the contamination area by removal of soil where possible, followed by restoration and by capping where contamination cannot be removed without endangering the integrity of the Eastern Containment Cell.

Remediation activities were also implemented in the Smelter Building Area after the discovery of contamination in this area during remediation in the adjacent soil areas (Area 12 and Area 10). The slab and sub-slab soils were removed to address contamination, and the soil has been remediated to meet RAOs. Residual contamination that exceeds TSCA criteria is present in one grid area within the Smelter Building Slab Area, and also at the margins of the soil remediation area based on confirmation sampling. Remediation of soil within these areas is addressed as part of this supplemental design.

Finally, as discussed above, residual soil contamination found within the ODC area exceeded TSCA criteria; removal of this soil was not within the scope of the design and design addendum. The contamination in most confirmation samples exceeded TSCA criteria, but removal of this soil below the

water table was not considered feasible within the scope of the design specifications. USEPA, the Illinois Environmental Protection Agency (IEPA), and SulTRAC agreed that leaving this material uncovered at completion of remediation activities would pose an exposure hazard. USEPA and IEPA agreed on using concrete recycled from on-site slab material to cover most of this area. Following this action, a small area on the site of about 150 by 160 sq. ft. remained uncovered. Residual concrete is present throughout the site that will be removed and processed to complete covering this area as part of this design. CH2M Hill is considering the final remedial strategy to address this soil as part of the related OMC Plant 2 groundwater remediation remedy, given presence of the contamination below the groundwater table.

Area 4 remediation was also completed to design depth as part of the remedial action. However, confirmation sampling and supplemental sampling in this area identified additional contamination. Moreover, Area 4 is also underlain by a natural gas pipeline at a depth of about 2 feet below the excavated soils. The remediation of this area is being addressed as part of the Waukegan Harbor remedy, which will include installation of a third containment cell between the existing containment cells to dispose of dewatered sediment that is removed from the harbor. The remedy will include installation of a cap that will include Area 4. Because Area 4 will be addressed under the Harbor Remedy Design, this is not included as part of this supplemental design.

Figure 2 shows the status of remediation in the OMC Plant 2 Building Area and elsewhere throughout the site. Figure 3 shows the areas of remaining contamination in the North Ditch, and also shows the results of confirmation sampling and supplemental investigation.

Figure 4 shows the excavation status in the Smelter Building Area, and also provides the results of confirmation sampling within the Smelter Building excavation and from sidewall samples collected in Areas 6 and 7. The yellow areas on the west side of Area 6 indicate where soil exceeds remediation objectives for PCBs. Similarly, the grids and sidewall samples on the eastern side of the Smelter Building Area are yellow, indicating that contaminated soil exceeding remediation objectives is present east of this excavated area.

Figure 5 shows (1) analytical results of confirmation sampling at Area 5 during current remediation activities, (2) results of pre-remediation delineation sampling by Tetra Tech EM Inc. (Tetra Tech) in 2005 (Tetra Tech 2005), (3) results of confirmation sampling following emergency response group remediation activities conducted by Tetra Tech in 2006 (Tetra Tech 2006), (4) results of sampling by Deigan and Associates in 2004 (Deigan and Associates 2004), and (5) results of SulTRAC's Supplemental

Investigation in 2011 (SulTRAC 2011a). These results indicated presence of contamination at the margins of prior excavations in Area 5 and to the north and east of Area 5. The results also suggest the presence of residual sediment contamination within the off-site portion of the North Ditch (NSED1, NSED7, and NSED 4). The remediation confirmation data and prior investigation data for the on-site portion of the North Ditch fully identified the extent of residual contamination below the design excavation depth (SulTRAC 2011a).

Additional supplemental investigation activities are underway, as described in the *Field Sampling Plan, Smelter Slab Area and Area 5 Assessment, Outboard Marine Corporation Plant No. 2...* (SulTRAC 2011b). These sample results will be used to determine the final extent of remediation of areas addressed by this supplemental design.

3.0 SUPPLEMENTAL DESIGN COMPONENTS

This supplemental design focuses on the remedial activities required to address additional contamination identified in Area 3 (North Ditch), Area 5 (Dune Area), and the Smelter Slab Area. The supplemental design will also consider removal, processing, and reuse of concrete to provide cover for the open area in the ODC portion of the former Plant 2 Building. The supplemental design components will include:

- Mobilization and initial activities
- Excavation and offsite disposal of sediment from the off-site portions of the North Ditch
- Capping of sediment in the on-site portion of the North Ditch
- Excavation and disposal of contaminated soil from the Dune Area
- Restoration of the Dune Area
- Excavation and disposal of contaminated soil from the Smelter Slab Area
- Capping of contaminated soil adjacent to the Eastern Containment Cell
- Removal, processing, and on-site reuse of concrete.

4.0 DESIGN APPROACH, ASSUMPTIONS, AND PARAMETERS

This section describes the approach and major assumptions of the basis of design. Section 5 discusses the delivery strategy for design components and additional details about plans to execute the Work.

4.1 MOBILIZATION AND INITIAL ACTIVITIES

Initial site activities after mobilizing to the site will include:

- Minor repair to fencing and establishment of entrance and exit routes to work areas
- Repair and re-establishment of the perimeter silt fence
- Establishment of work areas and central equipment storage and operations area
- Minor repair to existing haul road, and creation of gravel equipment storage/decontamination area.

For the purposes of this supplemental design and based on the short duration of work activity, it is assumed that no fixed office areas or site security will be established. All entrance and exit locations that will be used by the subcontractor will be monitored and controlled by the contractor during work hours only.

The erosion controls will comply with the existing Erosion and Sediment Control Plan, which is included in Appendix A. Construction of erosion control measures will follow standard erosion control and best management practices such as silt fencing, sediment traps, and construction entrances; these are based on Lake County guidance, IEPA guidance, and USEPA Guidance (*Summary Guidance Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices* [USEPA 1992]).

4.2 DUNE AREA ASSESSMENT

Prior to initiating excavation or sediment removal within the Dune Area and off-site portion of the North Ditch, SulTRAC will perform a field assessment of state-endangered plants present in the area to be excavated or used for heavy equipment access. SulTRAC will adhere to our previously approved procedures for managing state-endangered plants, which may require temporary removal, storage, and replanting at completion of excavation and restoration activities. The Illinois Department of Natural Resources (IDNR) will be consulted to identify any changes to these procedures, and if so, these will be addressed before implementing work activities. The Dune Area Assessment will establish the baseline plant density and diversity to be used as the basis for dune restoration objectives.

4.3 DELINEATION OF PCB CONTAMINATION

SulTRAC will complete supplemental sampling to fully determine the extent of soil contamination before finalizing the extent of remedial measures. Due to the required turnaround time for remediation activities, this information may not be available prior to solicitation of bids from subcontractors. SulTRAC has made reasonable assumptions as to the quantity of soil likely to be remediated.

4.4 WASTE CHARACTERIZATION

Waste determination will be made once a subcontractor has been chosen, as the analytical parameters will be based on the approved receiving facility's requirements. Anticipation is that four waste streams will require characterization: PCB-contaminated soil, PCB-contaminated sediment, TSCA soil, and TSCA sediment.

4.5 SOIL EXCAVATION

Soil will be mechanically excavated from the Dune Area and the Smelter Slab Area as shown on Figure 4 and Figure 8. At the Dune Area, expectation is that soil will be excavated and stockpiled to minimize disturbance to the Dune Area ecology. At the Smelter Slab Area, the sequence of work will be managed to allow for direct loadout of contaminated soils. Prior to transportation off site, the subcontractor will be required to provide an approved waste profile form and manifest for transportation to a designated disposal facility. This facility must be approved by SulTRAC prior to use.

To the extent practical, the results of supplemental sampling will be used to determine the lateral and vertical extents of excavation. However, confirmation sampling may be necessary in some cases where data meeting remediation goals (RG) are not available in the adjacent 50- by 50-foot grid area. In these cases, confirmation sampling will be conducted by SulTRAC. When necessary, confirmation samples will be collected on sidewalls at a frequency of 1 per 50 linear feet, and on a base at one sample per 2,500 sq. ft., based on a 50- by 50-foot grid area. Results for sampling will be requested on an expedited basis from the laboratory. Generally, availability of results is expected within 72 hours of sample collection.

Best management practices will be employed during excavation to minimize erosion of stockpiles and dust generated from operations—including lining and berming the stockpiles, as well as covering the stockpiles at the end of each day.

4.6 SEDIMENT EXCAVATION AND CAPPING

Excavation of sediment from the off-site portion of the North Ditch is expected to include mechanical excavation after temporarily dewatering the ditch under dry conditions. Water will be managed to prevent releases from the excavation area to the downstream area during sediment removal activities. The release of water would require meeting performance standards prior to discharge as detailed in the specifications.

The depth of sediment removed will be based on the identified waste profile as provided in the bid specifications, but is expected not to exceed 3 feet below existing grade.

During sediment remediation, water in the existing ditch may be managed after filtration to remove suspended solids in the existing excavated portions of the site, provided the water does not overflow and discharge from the site and it meets performance standards as detailed in the specifications. Samples will be collected by SulTRAC and analyzed for PCBs prior to on-site management (note that simple use of bag filters was effective in removing suspended sediment, and resulted in non-detection results for PCBs during water management activities for the North Ditch remediation). Temporary coffer dams (or equivalent) will be used to isolate sections of the ditch and facilitate sediment removal with mechanical excavation.

Sediment capping will encapsulate contaminated sediments and prevent erosion of contamination to downstream portions of the ditch. Use of a geotextile fabric to cover the on-site portions of the North Ditch is expected, and then a rock armor surface is to be added as protection. Installation of a geotextile fabric that has an organo-clay layer will require lowering the water level in the ditch during installation to allow for proper placement and anchoring to either side. Following placement of the capping material, rock armoring will be added as cover. A temporary cofferdam will be created at the site boundary or in sections to allow for placement. Water will be managed in the existing water retention basin or in on-site depressions after filtering to meet performance standards for PCBs.

4.7 CAPPING OF SOIL AREA 5

Soil contamination that exhibited TSCA characteristics was encountered on the north wall of Area 5 during remediation of this area, and on the west wall following remediation activities in 2006. In addition, soil sampling at the western portion of excavations completed during prior remedial action identified contamination above remediation objectives near the Eastern Containment Cell. The cap will consist of a multilayer cap constructed in accordance with criteria provided in USEPA's *TSCA Landfill Inspection*

Guidance Manual (USEPA 1990). The cap will be placed in a manner that prevents damage from the existing drainage system for the Eastern Containment Cell. The location of the proposed cap area and a conceptual cross section are shown on Figure 7.

4.8 CONCRETE REMOVAL, PROCESSING, AND PLACEMENT

Concrete is present throughout the Plant 2 Area, Area 7, Area 12, Area 13, and the Smelter Slab Area. This material will be removed where exposed, taken to a central location, and processed for on-site reuse as fill in the ODC Area. Locations of concrete removal and placement areas are shown on Figure 2.

4.9 RESTORATION

Prior to conducting the work, SulTRAC will document the species and density of plants within the Dune Area to be remediated. The assessment will establish the baseline for restoring the dune to its original condition so as to minimize long-term impacts to the ecological resource.

Methods to restore the excavated Dune Area will be similar to those applied during the remedial action. The Dune Area will be mechanically excavated to remove contamination to the depth of contamination or to groundwater to meet RAOs. The Dune Area will then be restored to its pre-excavation topography using imported clean sand, and thereafter revegetated to the original native plant density using either plantings or a seed mix.

No backfill will be placed in the North Ditch after excavation.

The Smelter Slab Area will not be restored to the original ground surface. To the extent practical, excavation areas will be left with minimal steep faces by final grading of the excavation margins. If clean fill is available from nearby activities, it will be used to fill in low lying areas. Clean imported fill must meet IEPA clean construction and demolition debris (CCDD) criteria. Documentation must be provided by the subcontractor or generating entity, and must be approved for on-site use by the resident engineer and the City before it will be accepted.

4.10 PERFORMANCE STANDARDS

Soil will be excavated to meet the RGs at the site. Soil RGs are listed in Table 1 below. Sediment will also be remediated to 1 milligram per kilogram (mg/kg) total PCBs.

TABLE 1
Site Cleanup Levels for COCs

Compound	Media	Cleanup Level (Source)
PCBs	Soil and sediment	1 ppm (Superfund PCB cleanup guidance)
PAHs	Soil	2 ppm (State published background levels)
PCBs	Building and debris	1 ppm (Superfund PCB cleanup guidance)

Except for the sediment excavation, excavation will not proceed below the water table or below 5 feet, whichever is shallower.

5.0 PROJECT DELIVERY STRATEGY

This section discusses the project delivery strategy for the supplemental RA activities. The contracting strategy and primary components of the remediation strategy are described below. Key project delivery strategies, relative to a specific component, are noted below in their respective sections.

5.1 CONTRACTING STATEGY

As noted above, it is expected that a single subcontractor will be solicited. The subcontract will be performance-based, involving specific unit costs for quantities delivered. Subcontractors will be allowed to propose alternative approaches, if those approaches can meet performance standards and provide project efficiencies in terms of reduced cost or accelerated completion. The contract documents have been prepared based on the assumption that USEPA is the owner and SulTRAC is the construction contractor. The project specifications and drawings have been prepared and bound as separate submittals, and provide the bidding process instructions and contract terms.

5.2 SOIL AND SEDIMENT IMPLMENTATION STRATEGY

Description of the primary components of the supplemental RA are presented below in their expected construction sequence. The design details and methods for each of these components were presented in Section 4.

- **Assessment of Dune Area** – Prior to initiation of excavation activities, SulTRAC will perform a field assessment of the state-endangered grass plants within the Dune Area to be excavated. This assessment will be completed prior to activity.
- **Supplemental Investigation** – SulTRAC is currently completing a supplemental investigation of the extent of contamination within the Dune Area and the Smelter Slab Area. This information will be used to finalize the lateral extent and depth of excavation activities.
- **Mobilization of Subcontractor** – The soil and sediment remediation subcontractor will mobilize to the site. This will include mobilizing all required equipment for executing the work.
- **Approval of Disposal Facilities and Waste Characterization** – The subcontractor will collect and analyze representative samples of soil and sediment, and obtain waste disposal approval from designated landfills. All disposal facilities will be identified and subject to USEPA and SulTRAC approval prior to use.
- **Sediment Capping and Remediation** – The subcontractor will install a sediment cap in the onsite portion of the North Ditch and remove sediment contamination in the designated off site portions of the North Ditch. The off-site soil contamination is expected to be transported and disposed of at a Subtitle D landfill after it meets the paint filter test.

  The North Ditch has a variable depth of water dependent on the amount of precipitation and the presence of beaver dams east of the site. The sediment surface on site is a sandy uniform surface with an elevation of about 577 feet MSL, and is covered by at least 4 feet of water. The depth of water in the off-site area of North Ditch is about 1 to 2 feet.
- **Soil Remediation** – The subcontractor will excavate soil within the Dune Area and within the Smelter Slab Area. The extent of soil excavation will be pre-determined to the extent possible. Confirmation sampling may be necessary following initial excavation within the Smelter Slab Area. Re-excavation following confirmation sampling results may involve some iterative excavation. Soil will be disposed of at a pre-approved Subtitle D or TSCA-compliant landfill, as determined by pre-excavation supplemental investigation sampling. The Dune Area work will proceed as soon as the area is accessible after completion of off-site sediment remediation, to allow initiation of restoration activities during fall 2011.
- **Soil Capping Area 5** – The subcontractor will install a cap within the area adjacent to Area 5, along the eastern boundary of the Eastern Containment Cell. This cap will cover soil that exhibits TSCA characteristic or that cannot be remediated to meet remediation objectives due to close proximity to the containment cell.
- **Concrete Removal, Processing, and Reuse** – Concrete is present throughout the Plant 2 Area, Area 7, Area 12, Area 13, and the Smelter Slab Area. This concrete will be removed and reprocessed using an on-site crusher. The crushed concrete will be placed within the former ODC Area for use as a temporary cap.

- **Perimeter Air Monitoring** – Perimeter air monitoring will not be conducted. Air monitoring was conducted using fixed particulate matter 10 microns or less (PM-10) monitoring stations for the duration of the remedial action, and site emissions met National Ambient Air Quality Standards (NAAQS) for respirable dust. Due to the limited remediation activity, continued monitoring using fixed PM-10 stations is not planned. Best management practices will be used to limit dust emissions, including using a water truck during dry conditions, wetting concrete during crushing, and limiting excavation work during windy dry periods. If dust emissions are observed, actions will occur to implement engineering controls or to measure airborne dust levels.
- **Site Restoration** – The subcontractor will be responsible for restoring Area 5 and the Dune Area, which will involve restoring the site topography and re-establishing the dune grasses based on the pre-excavation Dune Area survey. In addition, the soil cap area will be seeded to re-establish cover. Restoration of the Dune Area will be conducted as soon as the area is accessible, to allow for restoration during conditions when the soil is not frozen.

Demobilization – The subcontractor will demobilize all equipment and materials from the site. Erosion control measures will be removed after completion of stabilization measures.

6.0 COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Section 5 of the CH2M HILL "Addendum to the Basis of Design Report..." (CH2M Hill 2009) specifies the ARARs applicable to this supplemental design. Compliance with the following ARARs will occur:

- Comprehensive Environmental Response, Compensation and Liability Act
- Resource Conservation and Recovery Act Land Disposal Restrictions
- TSCA
- Clean Air Act
- Fish and Wildlife Coordination Act
- Endangered Species Act of 1973
- Occupational Safety and Health Administration (OSHA).

In addition, ARARs include minimizing environmental and public impacts through implementing site access controls, soil erosion controls, and safe transportation of contaminated materials.

Site access will be monitored during work activities. Access to the site will be restricted, and the subcontractor will monitor and restrict access to unauthorized parties. The City has access to the area, and it will have unrestricted access to non-work areas during the duration of the work. Other parties with access may also be identified by the City prior to and during work activities. The subcontractor will not be responsible for limiting site access after work hours, but will ensure that exits are secured prior to leaving the site.

Best management practices for soil erosion control will be implemented within work areas during construction. Erosion control measures will be adopted from the Lake County Watershed Development Ordinance (2006), the *Illinois Urban Manual* (Natural Resources Conservation Service 2002), and project experience in similar construction-related activities described in the Erosion and Sediment Control Plan (Appendix A).

The subcontractor will be required to tarp, cover, or enclose all loads of contaminated and non-contaminated material destined for off-site disposal.

7.0 CONSTRUCTION.SCHEDULE

A proposed construction schedule is included as Figure 9.

8.0 COST ESTIMATE

The cost estimate for the work described in this supplemental design is approximately $1,500,000. The estimated cost was calculated with an accuracy of plus 15 to minus 5 percent. This cost estimate modifies the cost provided by CH2M HILL of $27,432,329 for the work already completed and that not covered by this supplemental design, including removal of the Trim Building slab and underlying subslab soils. The cost estimate is included in Appendix B.

The cost estimates shown, along with the resulting conclusions on project financial or economic feasibility or funding requirement, have been prepared for guidance in project evaluation and implementation from the information available at the time that the cost estimate was prepared. The final costs of the project and resulting feasibility will depend on actual labor and material costs, competitive market conditions, actual site conditions, final project scope, implementation, and other variable factors. As a result, the final project costs will vary from the estimates provided herein.

9.0 BIDDABILITY, CONSTRUCTABILIITY, AND OPERABILITY REVIEW

This supplemental design has been reviewed by SulTRAC senior engineers with an emphasis on biddability and constructability. Significant concerns were not identified during the review.

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FIGURES

(Nine Sheets)

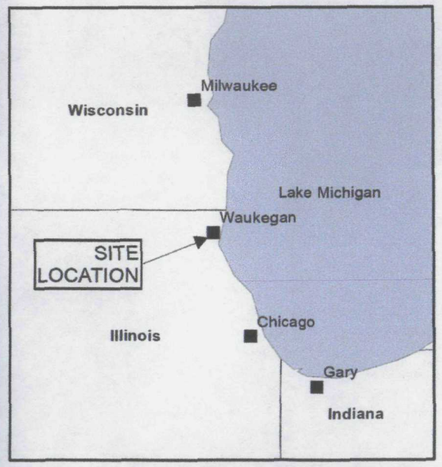
9/15/2011 G:\GIS\85...\MXD\mxd\Spec-0911\Fig1_SiteLocation.mxd m.bank

LEGEND

Site Location

N
W E
S

0 2,000 4,000 Feet



OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

FIGURE 1
SITE LOCATION

SulTRAC

GATE (SECONDARY CONSTRUCTION ENTRANCE)

AREA 4

AREA 3

WEST CONTAINMENT CELL

EAST CONTAINMENT CELL

AREA 8

AREA 9

AREA 6

AREA 5

FORMER SMELTER BUILDING

FORMER MANUFACTURING BUILDING (BLDG 1)

AREA 10

AREA 12

DIE CAST AREA

DUNES AREA

TRIM BUILDING

AREA 13

UTILITY CORRIDOR NOT EXCAVATED

AREA 7

AREA 2

AREA 1

SOUTH DITCH

Image Source: Modified from ESRI World Imagery

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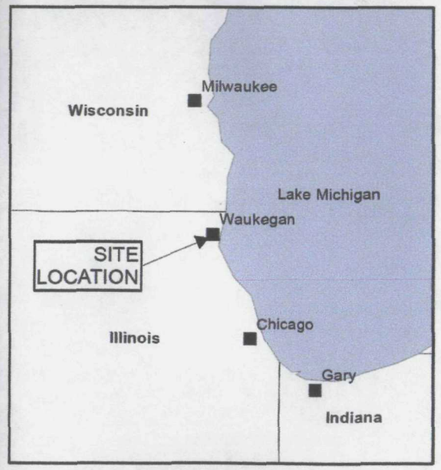
LEGEND

- Utility Corridor
- Remediation Complete
- TSCA Soil To Be Excavated
- Remediation Complete - Backfilled
- Remediation Complete - Area To Be Backfilled With Crushed Concrete
- 50' x 50' Grids
- Fence

Note:
Scale of excavation and backfill approximate

N
W E
S

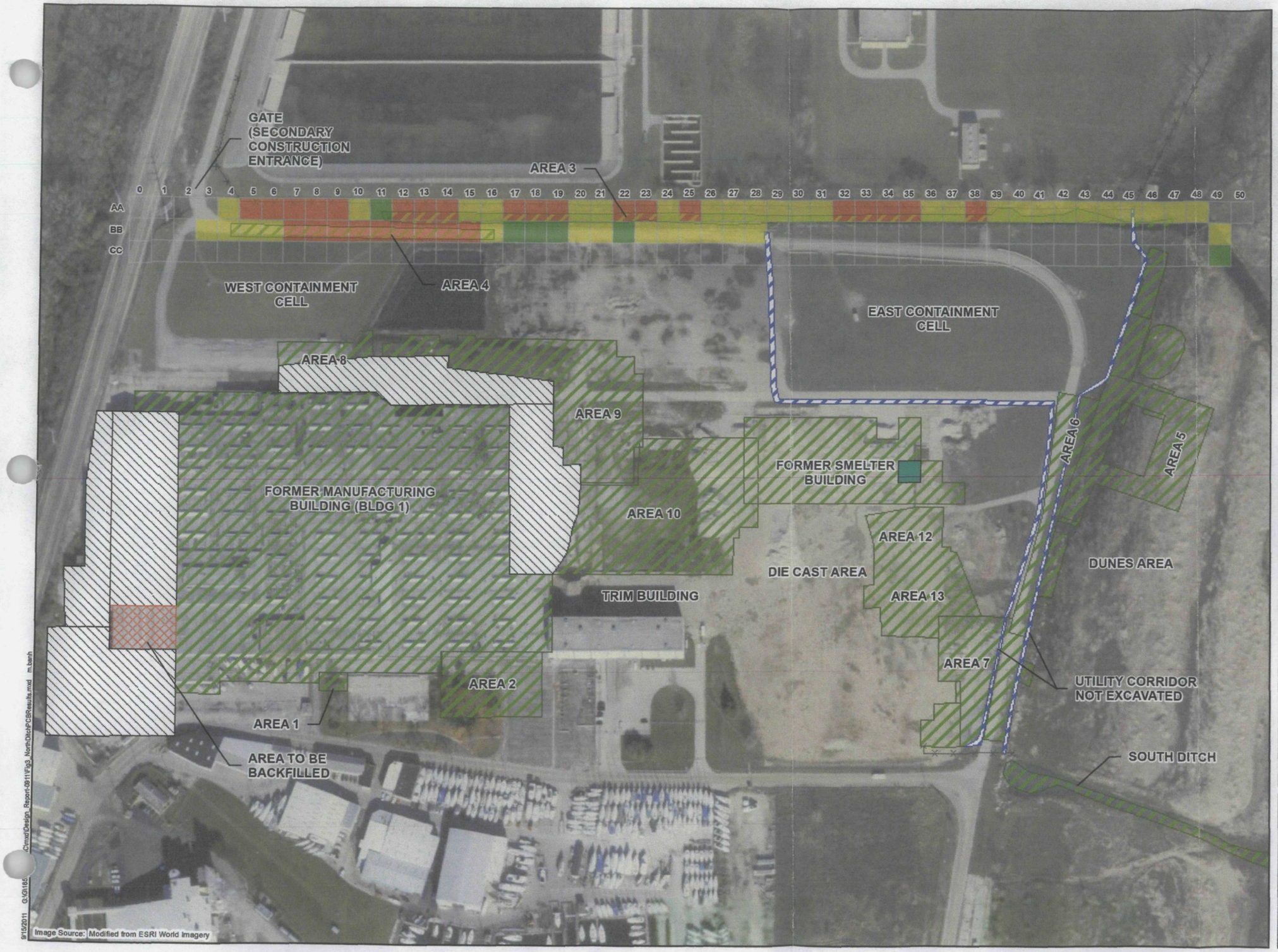
0 200 400 Feet



OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

FIGURE 2
STATUS OF PHASE I
REMEDIAL ACTION

SulTRAC



LEGEND

- PCB < 1ppm
- PCB >1< 50ppm
- PCB > 50ppm
- Utility Corridor
- Remediation Complete
- TSCA Soil To Be Excavated
- Remediation Complete - Backfilled
- Remediation Complete - Area To Be Backfilled With Crushed Concrete

Notes:
1. Scale of excavation and backfill approximate.
2. Sample results for AA-11 through AA-46, and BB-4 through BB-17 are from the post-excavation confirmation sampling results.

N W E S

0 200 400 Feet

OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

FIGURE 3
PCB RESULTS
NORTH DITCH AND AREA 4

SulTRAC

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LEGEND
TSCA Material To Be Excavated For This Contract
Estimated Subtitle D Excavation Area For This Contract
Previous Excavation Boundary
Utility Corridor
N
W
E
S
0
100
200
Feet
FORMER SMELTER BUILDING
AREA 6
AREA 5
AREA 12
DIE CAST AREA
AREA 13
AREA 7
DUNES AREA
UTILITY CORRIDOR NOT EXCAVATED
42
Wisconsin
Milwaukee
Lake Michigan
Waukegan
SITE LOCATION
Illinois
Chicago
Gary
Indiana
Image Source: Modified from ESRI World Imagery
ST SulTRAC

OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

FIGURE 4
PROPOSED EXCAVATION AREAS

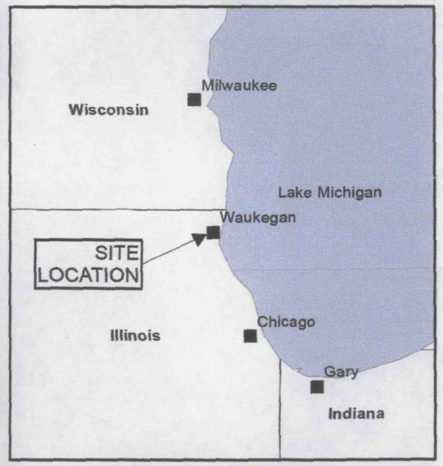
LEGEND

DEIGAN AND ASSOCIATES SAMPLES (2004-2005)

- PCB > 1 mg/kg
- PCB < 1 mg/kg
- Sediment Removal Area
- East Sediment Containment Cell
- OMC Beachfront Property Boundary
- Previous Excavation Boundary
- Utility Corridor

N
W E
S

0 100 200
Feet



OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

FIGURE 5
OFF-SITE NORTH DITCH
SEDIMENT REMOVAL AREA

SulTRAC

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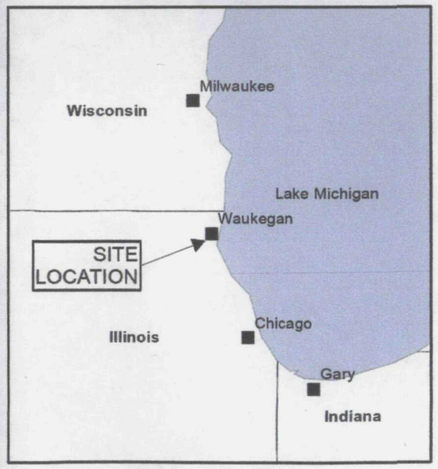
LEGEND

- Location Of Sediment Cap Installation
- Utility Corridor
- 50' x 50' Grids
- Fence

N
W E
S

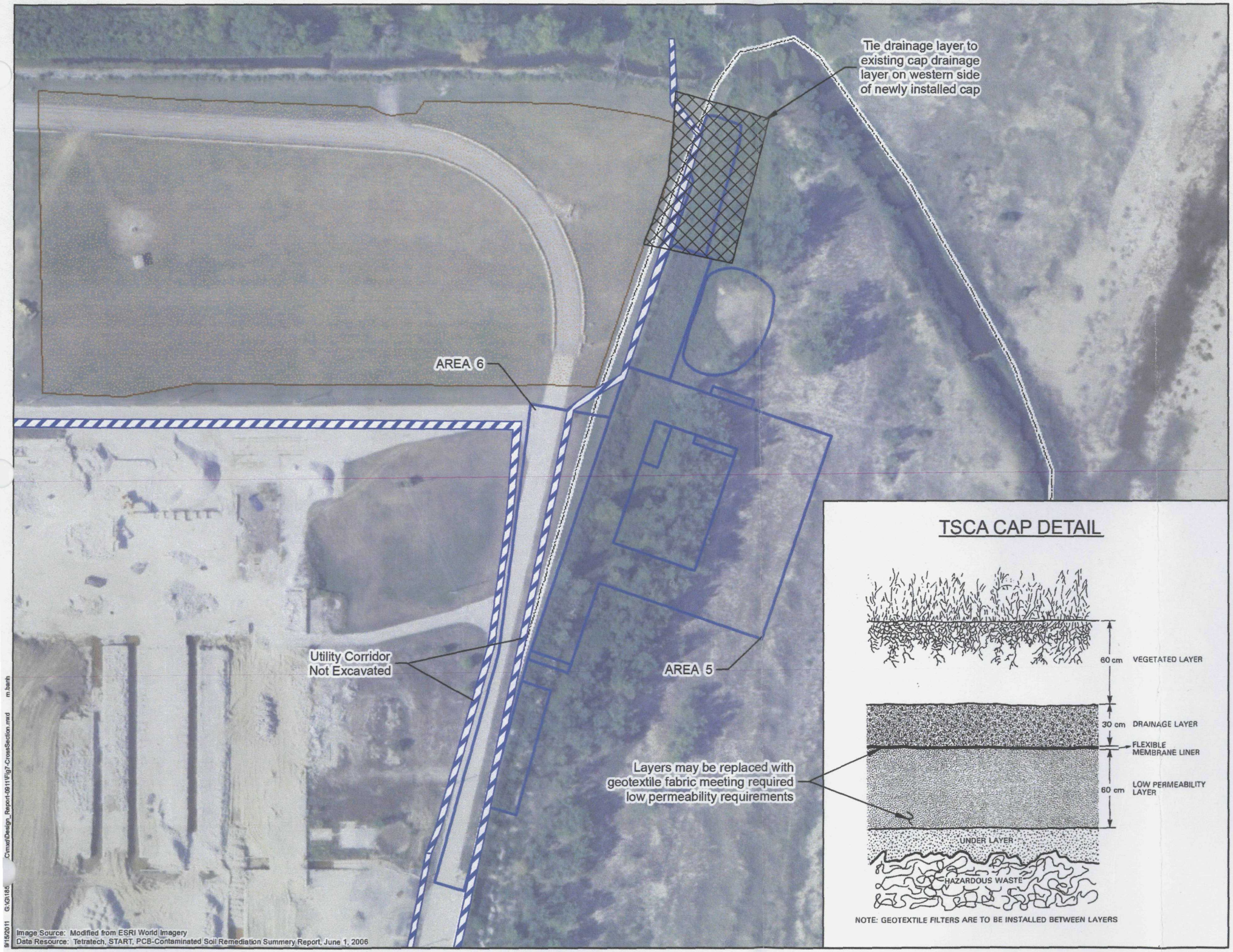
0 100 200
Feet

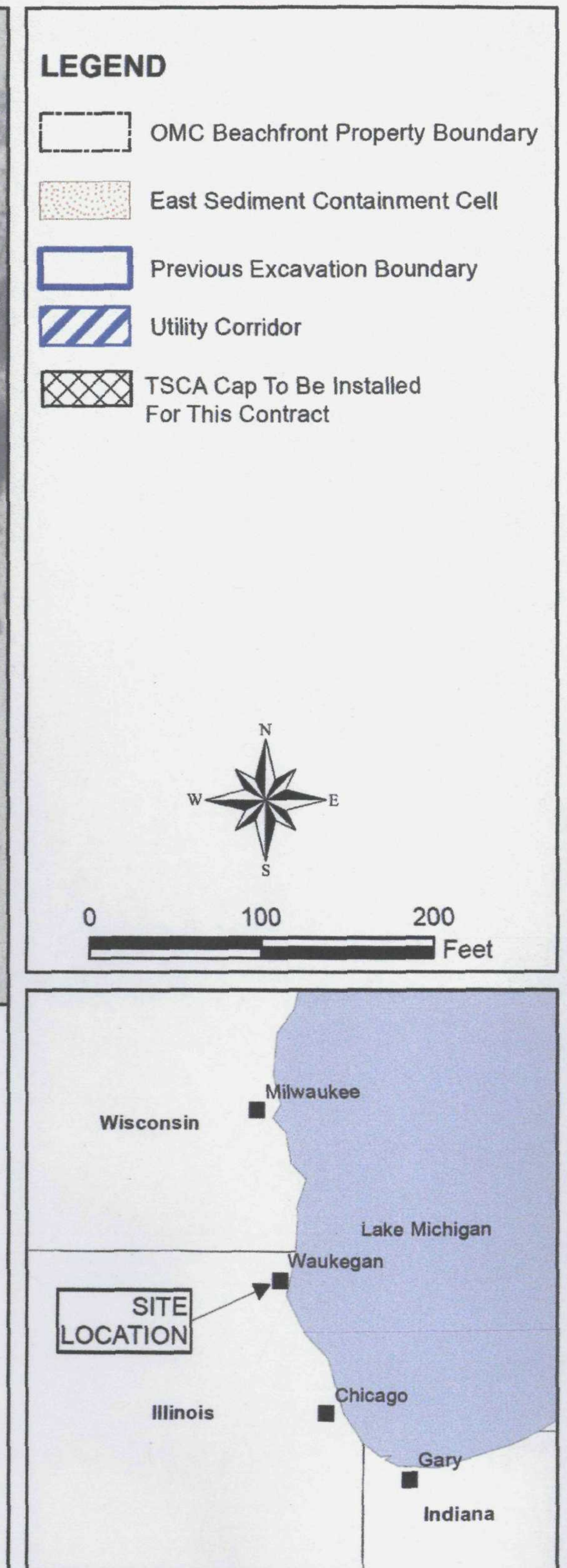


OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

FIGURE 6
NORTH DITCH CAPPING AREA

SulTRAC


Tie drainage layer to existing cap drainage layer on western side of newly installed cap
AREA 6
AREA 5
Utility Corridor Not Excavated
Layers may be replaced with geotextile fabric meeting required low permeability requirements
TSCA CAP DETAIL
60 cm VEGETATED LAYER
30 cm DRAINAGE LAYER
FLEXIBLE MEMBRANE LINER
60 cm LOW PERMEABILITY LAYER
UNDER LAYER
HAZARDOUS WASTE
NOTE: GEOTEXTILE FILTERS ARE TO BE INSTALLED BETWEEN LAYERS
Image Source: Modified from ESRI World Imagery
Data Resource: Tetratech, START, PCB-Contaminated Soil Remediation Summery Report, June 1, 2006
9/15/2011 G:\G185 C\mxd\Design_Report-0911\Fig7-CrossSection.mxd m.banh


LEGEND
OMC Beachfront Property Boundary
East Sediment Containment Cell
Previous Excavation Boundary
Utility Corridor
TSCA Cap To Be Installed For This Contract
N
W
E
S
0
100
200
Feet
Milwaukee
Wisconsin
Lake Michigan
Waukegan
SITE LOCATION
Illinois
Chicago
Gary
Indiana

OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

FIGURE 7

EAST CAP EXTENSION LAYOUT AND CROSS SECTION

ST SulTRAC

9/15/2011 GIS\165 JC\mxd\Design_Report-0911\Fig8-DuneSoilRemArea.mxd m.banh

LEGEND

- Proposed Soil Boring Location
- Estimated Remediation Area For This Contract
- Previous Excavation Boundary
- Utility Corridor
- OMC Beachfront Property Boundary
- East Sediment Containment Cell
- 50' x 50' Grids

N
W
E
S

0 50 100 Feet

OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

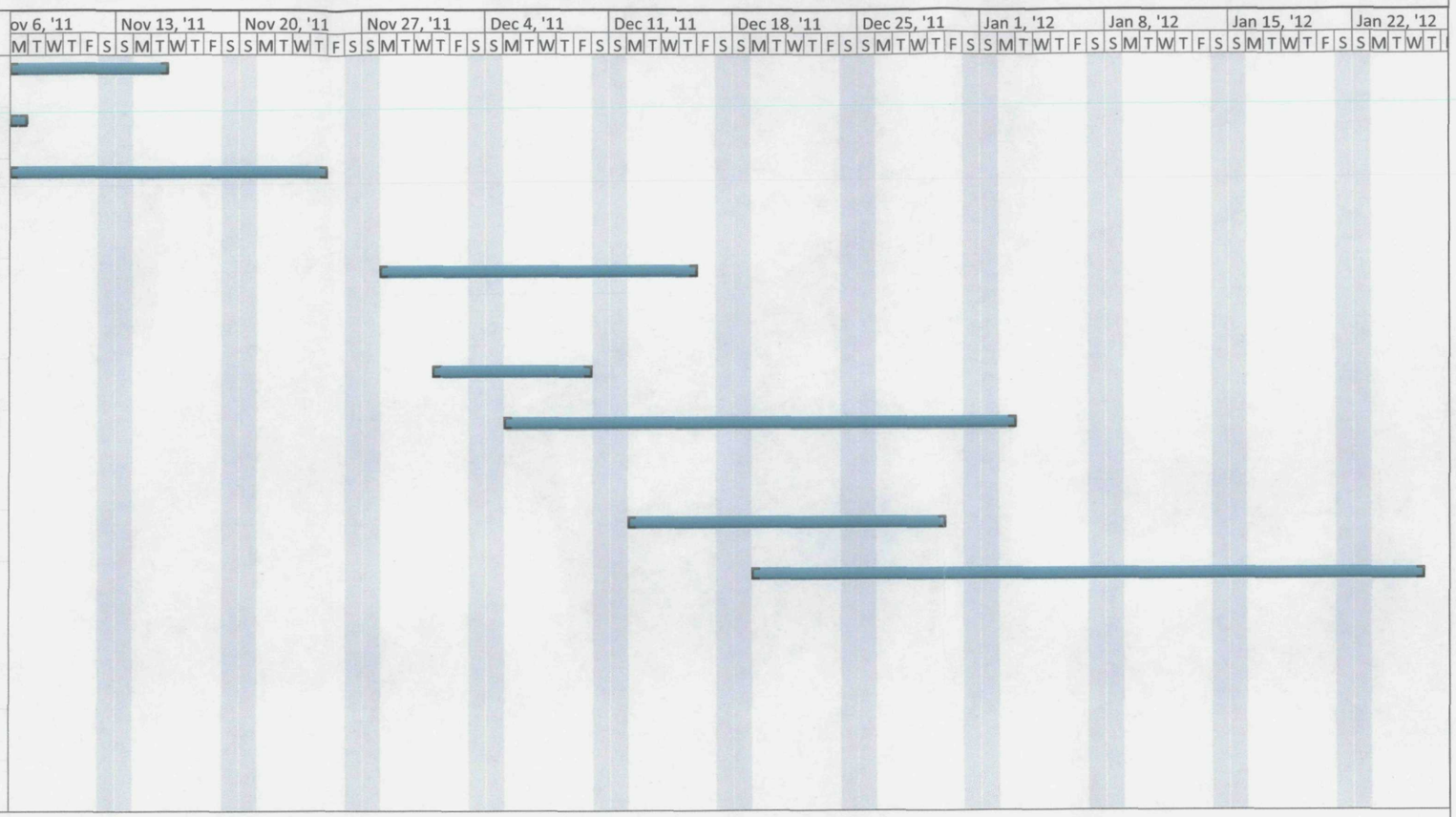
FIGURE 8
DUNE SOIL REMEDIATION AREA

SulTRAC

FIGURE 9

OUTBOARD MARINE CORPORATION SUPPLEMENTAL DESIGN

ID	Task Mode	Task Name	Duration	Start	Finish
1		Moblization	7 days	Mon 11/7/11	Tue 11/15/11
2		Dune Area Assessment	1 day	Mon 11/7/11	Mon 11/7/11
3		Dune Area Soil Excavation	14 days	Mon 11/7/11	Thu 11/24/11
4		Offsite Sediment Excavation	14 days	Mon 11/28/11	Thu 12/15/11
5		Dune Area Restoration	7 days	Thu 12/1/11	Fri 12/9/11
6		Onsite Sediment Capping	21 days	Mon 12/5/11	Mon 1/2/12
7		Smelter Slab Excavation	14 days	Mon 12/12/11	Thu 12/29/11
8		Concrete Removal, Crushing, and Placement	28 days	Mon 12/19/11	Wed 1/25/12
9		Final seeding	14 days	Mon 4/9/12	Thu 4/26/12
10		Demoblization	5 days	Tue 1/25/11	Mon 1/31/11



Project: Project Timeline
Date: Wed 9/14/11

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline
Split	External Tasks	Inactive Summary	Manual Summary	Progress
Milestone	External Milestone	Manual Task	Start-only	
Summary	Inactive Task	Duration-only	Finish-only	

APPENDIX A

EROSION AND SEDIMENT CONTROL PLAN

EROSION AND SEDIMENT CONTROL PLAN

Final Design
For Remediation of Soil, Sediment, and Building Media

OMC Plant 2 Site
Waukegan, Illinois

WA No. 020-RDRD-0528 / Contract No. EP-S5-06-01

June 2008

Contact Information

Owner

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Agent

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Attention: Jewelle Keiser
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Catherine G. Barnett, P.E.
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St. Louis, MO 63102-2542

Construction Subcontractor(s)

Unknown at this time

Abbreviations and Acronyms

BMP	Best Management Practice
ft^2	square feet
NSSD	North Shore Sanitary District
OMC	Outboard Marine Corporation, Inc.
PCB	polychlorinated biphenyl
RA	remedial action
USEPA	United States Environmental Protection Agency

Contents

Introduction

This document provides an Erosion and Sediment Control Plan for earth disturbing activities associated with the Outboard Marine Corporation, Inc. (OMC) Plant 2 soil remedial action (RA). The plan incorporates the use of Best Management Practices (BMPs) to the maximum extent possible and is based on Lake County, Illinois, Illinois Environmental Protection Agency, and United States Environmental Protection Agency (USEPA) guidance. The BMPs include silt fence, inlet protection, mulch and erosion blankets, seeding, and rock construction site entrances and exits. Project staging will be used to minimize the overall area disturbed at any one time. Erosion and sediment controls details are included in the drawings.

Site Description

The OMC Plant 2 site is a 60-acre industrial property on the lakefront in Waukegan, Illinois. The OMC Plant 2 building was a 1,036,000-square foot (ft^2) former manufacturing plant (Plant 2) and included several parking lot areas to the north and south of the building complex. Approximately 400,000 ft^2 of the former manufacturing plant has since been demolished down to the building slab.

The site is bordered by the North Shore Sanitary District (NSSD) to the north, Lake Michigan to the east, Sea Horse Drive and Waukegan Harbor to the south, and E.J. & E Railroad tracks to the west. The north ditch drains upland (offsite) areas and runs along the NSSD border toward Lake Michigan until it turns to the south close to the lake. The lakefront portion of the site is emergent dune land and beachfront. An aerial view of the OMC Plant 2 area is included in Attachment A.

Site topography generally slopes gently (less than 2 percent) from the western edge of the OMC Plant 2 facility east toward the north and south ditches and, ultimately, to Lake Michigan. Coastal dunes are present between the site and Lake Michigan. Lake Michigan east of the site and the Waukegan Beach south of the site are listed on the Illinois 303(d) list of impaired waters for Escherichia coli (*E. coli*) and polychlorinated biphenyl (PCB) impairment; however, total maximum daily loads have not yet been developed for these water bodies.

Site soils are predominately sand. Depth to groundwater ranges from approximately 3 to 5 feet below ground surface.

Project Description

USEPA determined that PCBs and carcinogenic polynuclear aromatic hydrocarbons in OMC Plant 2 site soil and sediment present unacceptable risks to current and future human and ecological receptors. In addition, PCB levels inside the OMC Plant 2 building would present unacceptable risks to future human receptors if left unaddressed. The RA for the soil and sediment and building media consists of the following components:

- Pre-demolition asbestos abatement.
- Demolition and offsite disposal of the OMC Plant 2 building and building materials, not including the concrete floor. Contaminated building materials will be placed within the designated decontamination area (see Drawing 1) and may be in contact with stormwater prior to offsite disposal. Stormwater and decontamination water will be collected, contained, and tested for offsite disposal.
- Demolition and offsite disposal of the OMC Plant 2 building concrete floors and sub-slab structures. The sub-slab unsaturated zone soil and unsaturated zone concrete associated with airways and tunnels will be investigated and characterized.
- Excavation of soil and sediment, if needed. Soil excavation includes contaminated unsaturated zone soil inside and outside the building footprint. Contaminated soil will be directly loaded for offsite disposal. No stockpiling of contaminated soil will occur. Excavation will occur only in the unsaturated zone; excavation will cease if groundwater is encountered. Contaminated sediment may be removed from the north and south ditches.
- Onsite crushing and recycling of non-contaminated concrete, brick, and cinder block for use as excavation backfill. After excavation is completed, excavated areas will be backfilled with clean, non-contaminated material (recycled or imported) and re-vegetated.

Refer to Drawing 1 for the proposed limits of demolition and excavation, and for further details of construction sequencing.

Soil and Material Stockpiles

Non-contaminated material (concrete, brick, or cinder block) will be temporarily stockpiled until it can be recycled for onsite use. Imported fill may be required to fill excavations to pre-construction grades. Imported fill not immediately placed in an excavation will be stockpiled onsite.

Salvageable demolition material (structural steel) may be temporarily stockpiled until it can be loaded for transportation and offsite disposal. Contaminated building materials and soil will be directly loaded and transported for offsite disposal.

Stockpiles will be located outside the Lake Michigan 100-year floodplain. Soil stockpiles will follow erosion control procedures outlined in the Erosion Control Measures section.

Wetlands and Endangered Species

Wetlands were not identified in the project area.

The dune area east of the OMC Plant 2 property is designated critical habitat for the federally-listed piping plover. The U.S. Fish and Wildlife Service indicated in a letter to the City of Waukegan (dated February 26, 2007) that "No piping plovers have been documented nesting in Illinois for decades with the only known occurrences of this species in recent years limited to a few transient migrating individuals; however, transient migrating

individuals occasionally stop over in Illinois, and last spring (2006) at least one piping plover stopped at Waukegan Beach." It is anticipated that no change in activities will be needed; however, a breeding bird survey will need to be performed prior to starting the RA to determine if nesting pairs are present.

Construction Schedule

Approximately 20 acres are estimated to be disturbed during the project. The total disturbance will be minimized as the demolition, excavation, grading, and stabilization occur over the project site. Land disturbances outside the building footprint will be limited such that no more than 5 acres will be affected at one time. During excavation inside the building footprint, the perimeter foundation will remain intact and provide containment to minimize soil erosion.

Prior to earth disturbing activities, sediment and erosion control BMPs will be installed throughout the project site. The BMPs will be maintained before, during, and after the earth disturbing activities and temporary stabilization are performed as discussed below. Additional scheduling information is included below in Table 1.

TABLE 1
Estimated Construction Schedule

Activity	Estimated Dates
Pre-Demolition Erosion Control (silt fence, inlet protection, construction site entrance and exits)	August 2008
Pre-Demolition Asbestos Abatement	August 2008 – October 2008
Building Demolition and Offsite Disposal	November 2008 – April 2009
Concrete Floor Demolition and Excavation of Contaminated Soils (install and maintain erosion controls during demolition: silt fence, construction site entrances and exits, inlet protection, soil stockpiles, erosion mat, temporary seeding and mulch)	May 2009 – November 2009
Temporary Seeding and Mulch, Erosion Mat	September 2009 – November 2009
BMP Inspection and Maintenance	August 2008 – November 2009

Site Map

The site map is included as Drawing C-1. Areas that are disturbed will be stabilized. Areas beyond the silt fence or planned excavation areas will not be disturbed. Dune excavation areas will be protected with erosion and sediment control BMPs as noted below. This map identifies site inlets and receiving waters.

Erosion Control Measures

Erosion control measures have been designed into the project as described in this section. Good housekeeping practices for the site are identified in the project specifications.

Erosion control measures were adopted from the Lake County Watershed Development Ordinance (2006), the Illinois Urban Manual (Natural Resources Conservation Service [NRCS], 2002) and using project experience for similar construction related activities.

Pre-Demolition and Excavation

Before demolition and excavation activities commence, BMPs will be installed to prevent the transport of sediment offsite. The BMPs include establishing silt fence(s), inlet protection(s), and construction site entrances and exits, and are further described below. Drawing 2 includes BMP details.

Silt Fence

A silt fence will be installed around the perimeter of the project site such that earth-disturbing activities will be implemented upgradient from the silt fence. Silt fence will limit sediment transported to Lake Michigan, and will be installed as shown in the BMP details (Drawing 2), following guidance from the Illinois Urban Manual (NRCS, 2002) Standard 920.

Silt fence may also be used as a form of inlet protection by providing sediment control when constructed around the perimeter of a field inlet (not an inlet surrounded in pavement). Field inlets receiving stormwater runoff from disturbed areas will be surrounded by perimeter silt fence, or be otherwise protected as described in the subsection below. As mentioned earlier, the installed silt fence will provide the maximum amount of grass buffer between the silt fence and the inlet, enabling the grass buffer to continue providing water quality benefits.

Silt fence will be placed at the base of a slope and directly adjacent to the area of disturbance to limit the amount of sediment traveling from the disturbed areas. Silt fence will also be installed perpendicular to runoff flow paths wherever possible, as is standard practice to maximize the silt fence benefit and to limit sediment from bypassing it. The silt fence will be inspected and maintained as described in the Reporting and Monitoring section of this document.

Inlet Protection

Inlet protection will be provided at each stormwater inlet before demolition and excavation activities begin. The inlet protection provides a filtering media to trap sediments before they enter the storm sewer system. More specifically, the inlets will be covered with a filter fabric and wire mesh, and further covered with 12 inches of clear stone (stone free of fines) as shown in the BMP details (Drawing 2). These protections will trap sediment before it can

enter the storm sewer system. Such inlet protection is appropriate for both paved and turf areas. Inlet protection will be inspected and maintained as described in the Reporting and Monitoring section of this document.

Construction Site Entrance and Exit

Each construction site entrance and exit will have appropriate BMPs to reduce tracking of material offsite. The rock gradation for the entrances and exits follows Illinois Urban Manual (NRCS, 2002) guidance for Stabilized Construction Entrances as outlined in Practice Standard 930. The rock entrances and exits are designed to reduce the amount of sediment transported on and off the project site. Should the entrances and/or exits become filled with sediment, the rock will be removed and new rock will be installed. Each location will incorporate the detail contained in the drawings.

During Demolition and Excavation

Erosion control features, such as silt fence and inlet protection, will be used during earth disturbing phases of the project. Additional portions of silt fence and inlet protection will be installed, as needed, as the excavation progresses. Areas disturbed during the project will be temporarily stabilized. No drainage ditches or concentrated flow areas are planned in the disturbed areas.

Stockpiles will be located outside the Lake Michigan 100-year floodplain. Silt fence will be constructed around the perimeter of each stockpile that is present for more than 72 hours.

Post-Demolition and Excavation

Following the final demolition and excavation activities on the project site, the site will be temporarily stabilized.

Stabilization

The site will not be brought to pre-construction grade during this project, as future work includes additional remediation activities and redevelopment of the Plant 2 property. Permanent stabilization measures such as topsoil, permanent seeding, and mulching are, thus, not anticipated.

Temporary Stabilization

Temporary stabilization will be applied within 21 days of the completion of excavation or other earth disturbance and will include a combination of temporary seeding and mulching, and placing recycled concrete or other granular fill over the disturbed areas of the project site.

Temporary seeding and mulching will be conducted during normal growing seasons following the specifications for Turfs and Grasses (Soil Excavation and Disposal Specification, Section 32 90 00). This plan is consistent with guidance from the Illinois Urban Manual (NRCS, 2002) guidance for temporary seeding as described in Standard 965.

Appropriate seed mixtures will be selected based on site conditions, growing season, and stabilization needs. If seeding cannot occur prior to September 30, 2009, the disturbed area will be stabilized using mulch or other appropriate material.

Recycled concrete or other granular fill may be used to temporarily stabilize the project site. As an erosion control option, the concrete may be crushed and placed over the disturbed areas of the project site to provide temporary stabilization. This recycled concrete and granular fill used for stabilization will have a minimum thickness of 6 inches. The gradation of the recycled concrete and granular fill will be consistent with coarse gravel and will minimize the amount of fine material in the fill. Minimizing the fine materials in the granular fill will reduce the sediment erosion potential from the fill area. In areas where recycled concrete or granular fill are used for temporary stabilization, seeding and mulching will not be used.

Permanent Stabilization

Permanent stabilization is not anticipated as part of this project. If permanent stabilization becomes necessary, guidance from the Illinois Urban Manual (NRCS, 2002) Standard 880 for Permanent Vegetation will be used.

Reporting and Monitoring Requirements

Inspection and maintenance practices used to maintain the erosion and sediment controls and their associated reporting and monitoring requirements are discussed below. Attachment B contains the necessary forms to schedule and complete the required inspections and incorporate corrective measures. An erosion and sediment control inspection checklist will be completed after each inspection.

The contractor will become familiar with the procedures and maintenance practices outlined herein. The responsible party will perform these duties, as necessary, to properly maintain the BMPs. These same procedures will be used for the long-term inspection and maintenance of the BMPs following construction.

Inspections

Disturbed areas of the site, including, but not limited to, material storage areas, vehicle entrances and exits, and the erosion controls noted in the Erosion and Sediment Control Plan, will be inspected weekly during demolition and excavation and within 24 hours of each 0.5-inch storm event.

Silt fences will be inspected for depth of sediment, tears, and integrity (to see if the fabric is securely attached to the fence posts), and fence-post stability. Sediment built up against the silt fence will be removed after it has reached a height equal to one-third of the silt fence height.

Inlet protection and construction entrances will be inspected for the amount of sediment collected in the rock aggregate. Built-up sediment will be removed from the inlet protection if the depth of sediment reaches one-third the inlet protection's height. Construction entrances and exits will be replaced or top-dressed if sediment fills more than one-half of the open pore space of the rock aggregate.

Maintenance and Repairs

The contractor or stormwater operator will correct deficiencies and repair damages to silt fence and inlet protection as soon as practical after inspection, but in no case later than 24 hours from the time of the inspection. Changes required to correct deficiencies in the Erosion and Sediment Control Plan will also be made as soon as practicable, but in no case later than 7 days after inspection.

Record Keeping

This Erosion and Sediment Control Plan will be maintained onsite during the duration of the project and made available for inspection during the hours of operation. A log of the inspections and corrective actions will be maintained and retained by the contractor for review purposes. A monthly inspection report will be sent to Lake County, and the City of Waukegan, as appropriate.

Change Management

If changes are required to this plan, a log of these activities should be attached to this plan. Changes to be noted include additions of new BMPs, replacement of failed BMPs, significant changes in the activities or their timing on the project, changes in personnel, changes in inspection and maintenance procedures, and updates to site maps.

Training

Each subcontractor is responsible for ensuring employees and lower-tiered subcontractors are properly trained to implement this plan. Documentation of training provided, including dates, number of attendees, subjects covered, and length of training, should be kept onsite.

Summary

The erosion control features outlined in this plan have been designed to reduce stormwater pollution potential at the project site. The project is scheduled to begin in August 2008 and be completed in November 2009. Wherever possible, existing green space will be maintained during construction.

The site will be temporarily stabilized following construction. The temporary stabilization will provide erosion and sediment control until the site is redeveloped or permanent stabilization is completed.

References

U.S. Fish and Wildlife Service letter to the City of Waukegan (February 26, 2007).

Lake County Stormwater Management Commission. 2006. Watershed Development Ordinance. Available online: http://www.co.lake.il.us/smc/regulatory/wdo/docs.asp.

NRCS. 2002. Illinois Urban Manual. Available online: http://www.il.nrcs.usda.gov/technical/engineer/urban/contents.html.

Drawings

Attachment B

BMP Inspection Form

EROSION AND SEDIMENT CONTROL INSPECTION CHECKLIST

Inspections will be conducted and documented weekly. Inspections will verify that construction erosion controls are in place and properly maintained and that good housekeeping practices are being followed. Correct any conditions that do not conform. If any deficiencies are noted during the inspection, corrective action must be taken within seven days and documented on the checklist.

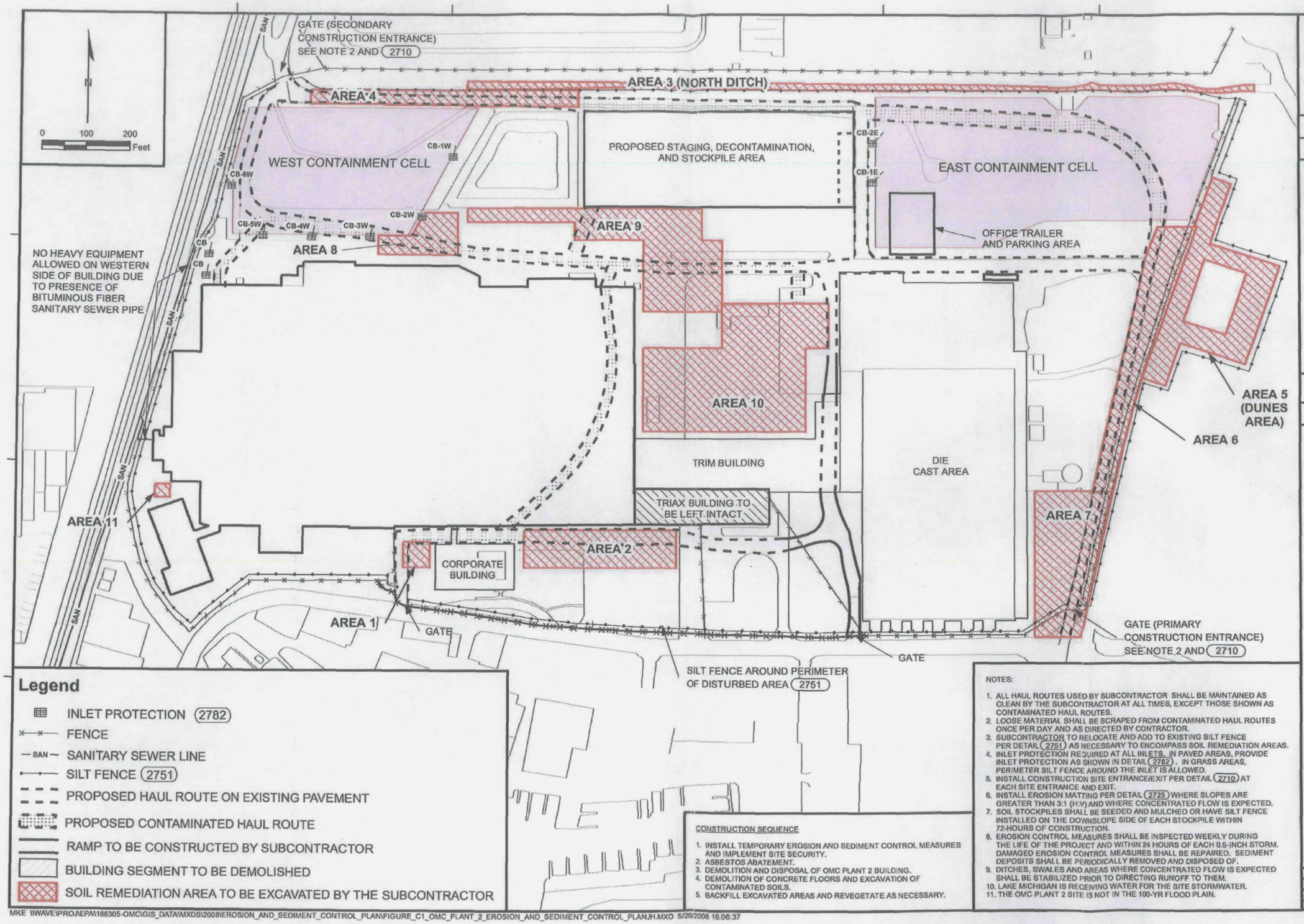
Section I General Information				
Plant Site: OMC Plant 2	**Name of Inspector/Title:**			
Inspection Date:	**Others Present/Title:**			
Inspection Items	**Yes**	**No**	**NA**	**Comment (note location of deficiencies)**
1. Are the sediment/erosion controls properly operating and being maintained?				
2. Is there unusual silt buildup in the ditches, sumps, pits or at catch basins?				
3. Are the silt fences standing and free of large sediment deposits? Is there evidence or overtopping or washout?				
4. Are the inlet protection devices working properly and free of large sediment deposits?				
5. Are temporary stabilization BMPs operating properly?				
6. Are the construction site entrance and exits BMPs operating properly?				
7. Are there obvious signs of construction materials or mud on roadways?				
8. If used, is erosion matting installed securely?				
9. If used, are hay bales staked in place and capable of containing silt (e.g. significant silt buildup downstream of hay)?				
10. If used, are hay bales picked up and disposed as needed?				
11. Is secondary containment for refueling area clean and free of sheen?				
12. Are absorbent materials available for spills from decommissioning or refueling activities?				
13. Is proper storage of used absorbent materials and contaminated soils provided?				
14. Has litter, construction trash or wastes been removed and properly containerized?				
15. Was the stormwater valve operated to open and close?				
16. Was litter and debris picked up?				
17. Were trash bins covered and closed?	____	____	____	
18. Was demolition debris properly containerized?	____	____	____	

Section II Corrective Action		
Deficiency Description	Date Corrected	Corrective Action

APPENDIX B
COST ESTIMATE

APPENDIX B -- COST ESTIMATE

COST ESTIMATE -- OUTBOARD MARINE CORPORATION SUPPLEMENTAL DESIGN				
		SUMMARY PAGE		
	Units	Unit Cost	No of Units	Cost
Cost Items				
Mobilization	Each	$ 15,000.00	1	$ 15,000.00
Surveyor	Hours	$ 105.00	200	$ 21,000.00
Clearing and Grubbing Dune Area	ACRE	$ 17,626.20	1	$ 17,626.20
Excavation of Soil Dune Area	Tons	$ 2.99	5000	$ 14,962.50
Excavation of Soil Smelter Area	Tons	$ 2.99	8333	$ 24,937.50
Sub D Transport and Disposal Smelter Area	Tons	$ 26.47	7917	$ 209,558.13
TSCA Transport and Disposal Smelter Area	Tons	$ 113.09	417	$ 47,118.75
Excavation of Sediment North Ditch	Tons	$ 12.86	917	$ 11,790.63
Sediment Bulking Application	Tons	$ 150.00	46	$ 6,875.00
Sub D Transport and Disposal Sediment	Tons	$ 26.47	1008	$ 26,691.09
Temporary Dewater Ditch Onsite	Each	$ 17,260.90	1	$ 17,260.90
Temporary Dewater Ditch Offsite	Each	$ 20,344.00	1	$ 20,344.00
Sub D Transport and Disposal Dune Area	Tons	$ 26.47	4500	$ 119,117.25
TSCA Transport and Disposal Dune Area	Tons	$ 113.09	500	$ 56,542.50
Backfill Dune Area	Tons	$ 12.55	5000	$ 62,737.50
Install Cap North Ditch	Each	$ 10.22	25500	$ 260,634.79
Install Cap Area 5	SF	$ 10.09	6750	$68,112.43
Remove concrete and stockpile	Each	$ 122,400.00	1	$ 122,400.00
Crush concrete	Tons	$ 8.45	6750	$ 57,054.38
Backfill crushed concrete	Tons	$ 4.10	6750	$ 27,641.25
Restore Area 5 (Dune Area)	ACRE	$ 50,400.00	1.5	$ 75,600.00
Demobilizatoin	Each	$ 15,000.00	1	$ 15,000.00
				$ 1,298,004.79
Performance Bond @ 2 percent of cost				$ 25,960.10
Subtotal				$ 1,323,964.89
Contingency (15 percent)				$ 198,594.73
		Total		$ 1,522,559.62



Legend

- INLET PROTECTION (2782)
- FENCE
- SANITARY SEWER LINE
- SILT FENCE (2751)
- PROPOSED HAUL ROUTE ON EXISTING PAVEMENT
- PROPOSED CONTAMINATED HAUL ROUTE
- RAMP TO BE CONSTRUCTED BY SUBCONTRACTOR
- BUILDING SEGMENT TO BE DEMOLISHED
- SOIL REMEDIATION AREA TO BE EXCAVATED BY THE SUBCONTRACTOR

CONSTRUCTION SEQUENCE

1. INSTALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AND IMPLEMENT SITE SECURITY.
2. *ASBESTOS ABATEMENT.*
3. DEMOLITION AND DISPOSAL OF OMC PLANT 2 BUILDING.
4. DEMOLITION OF CONCRETE FLOORS AND EXCAVATION OF CONTAMINATED SOILS.
5. BACKFILL EXCAVATED AREAS AND REVEGETATE AS NECESSARY.

NOTES:

1. ALL HAUL ROUTES USED BY SUBCONTRACTOR SHALL BE MAINTAINED AS CLEAN BY THE SUBCONTRACTOR AT ALL TIMES, EXCEPT THOSE SHOWN AS CONTAMINATED HAUL ROUTES.
2. LOOSE MATERIAL SHALL BE SCRAPED FROM CONTAMINATED HAUL ROUTES ONCE PER DAY AND AS DIRECTED BY CONTRACTOR.
3. SUBCONTRACTOR TO RELOCATE AND ADD TO EXISTING SILT FENCE PER DETAIL (2751) AS NECESSARY TO ENCOMPASS SOIL REMEDIATION AREAS.
4. INLET PROTECTION REQUIRED AT ALL INLETS. IN PAVED AREAS, PROVIDE INLET PROTECTION AS SHOWN IN DETAIL (2782). IN GRASS AREAS, *PERIMETER SILT FENCE AROUND THE INLET IS ALLOWED.*
5. INSTALL CONSTRUCTION SITE ENTRANCE/EXIT PER DETAIL (2710) AT EACH SITE ENTRANCE AND EXIT.
6. INSTALL EROSION MATTING PER DETAIL (2725) WHERE SLOPES ARE GREATER THAN 3:1 (H:V) AND WHERE CONCENTRATED FLOW IS EXPECTED.
7. SOIL STOCKPILES SHALL BE SEEDED AND MULCHED OR HAVE SILT FENCE INSTALLED ON THE DOWNSLOPE SIDE OF EACH STOCKPILE WITHIN 72-HOURS OF CONSTRUCTION.
8. EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY DURING THE LIFE OF THE PROJECT AND WITHIN 24 HOURS OF EACH 0.5-INCH STORM. DAMAGED EROSION CONTROL MEASURES SHALL BE REPAIRED. SEDIMENT DEPOSITS SHALL BE PERIODICALLY REMOVED AND DISPOSED OF.
9. DITCHES, SWALES AND AREAS WHERE CONCENTRATED FLOW IS EXPECTED SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
10. LAKE MICHIGAN IS RECEIVING WATER FOR THE SITE STORMWATER.
11. THE OMC PLANT 2 SITE IS NOT IN THE 100-YR FLOOD PLAIN.

NO.	DATE	DSGN	DR	CHK	BY
		R. STRYKER	M. PETERSHACK	R. STRYKER	APVD

REVISION

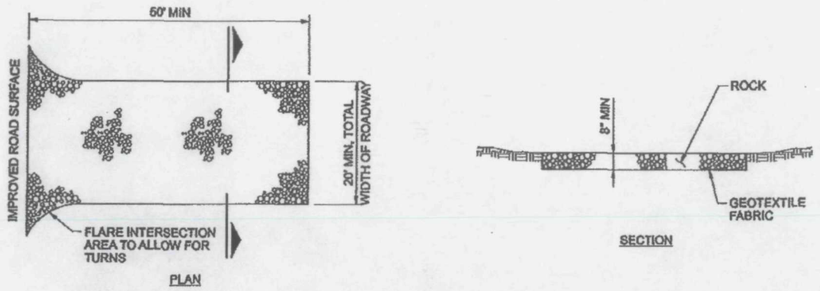
OMC PLANT 2
WAUKEGAN HARBOR
AREA OF CONCERN
WAUKEGAN, ILLINOIS

CH2MHILL

CIVIL
EROSION AND SEDIMENT CONTROL PLAN

DATE	MAY 2008
PROJ	359748
DWG	C-1
SHEET	1

MKE \\WAVE\PROJ\EPA\186305-OMC\GIS_DATA\MXDS\2008\EROSION_AND_SEDIMENT_CONTROL_PLAN\FIGURE_C1_OMC_PLANT_2_EROSION_AND_SEDIMENT_CONTROL_PLANJH.MXD 5/20/2008 16:06:37

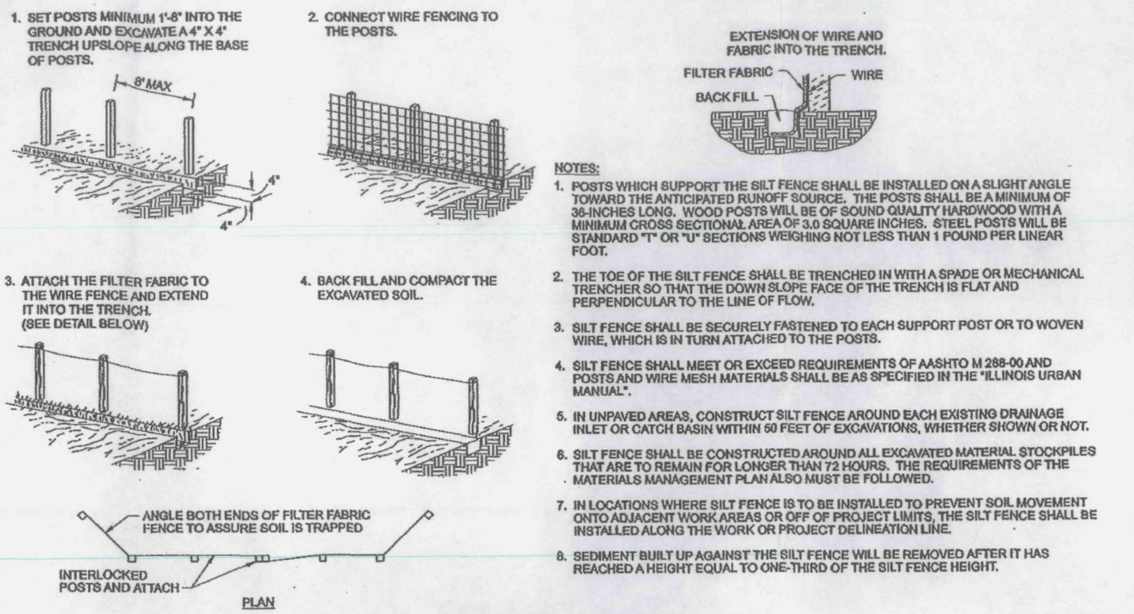


NOTES:

1. ROCK CONSTRUCTION ENTRANCE WILL BE BUILT AT ALL LOCATIONS WHERE THE CONTRACTOR WILL ACCESS THE CONSTRUCTION SITE FROM ANY PAVED ROAD, PUBLIC OR PRIVATE. CONTRACTOR WILL UTILIZE THE ROCK CONSTRUCTION WHENEVER ANY VEHICLES LEAVES AN UNIMPROVED AREA ONTO A PAVED ROAD.
2. ROCK CONSTRUCTION ENTRANCES WILL BE CONSTRUCTED TO THE MINIMUM WIDTH AND THICKNESS *DIMENSIONS AS SHOWN IN DETAIL.*
3. THE STRUCTURE'S THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. ALL SEDIMENT DEPOSITED ON THE ROADWAYS WILL BE PROMPTLY REMOVED AND RETURNED TO THE CONSTRUCTION SITE. WASHING THE ROADWAY WITH WATER IS NOT PERMITTED.
4. ROCK SHALL BE IDOT COURSE AGGREGATE GRADATIONS: CA-1, CA-2, CA-3, OR CA-4.
5. *CONSTRUCTION ENTRANCES AND EXITS WILL BE REPLACED OR TOP-DRESSED IF SEDIMENT FILLS* MORE THAN ONE-HALF OF THE OPEN PORE SPACE OF THE ROCK AGGREGATE.

CONSTRUCTION SITE ENTRANCE/EXIT DETAIL
NTS

2710

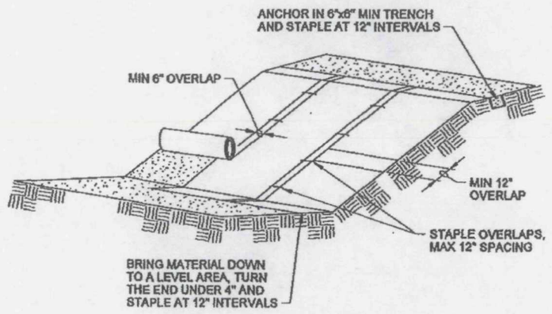


NOTES:

1. POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. THE POSTS SHALL BE A MINIMUM OF 36-INCHES LONG. WOOD POSTS WILL BE OF SOUND QUALITY HARDWOOD WITH A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES. STEEL POSTS WILL BE STANDARD "T" OR "U" SECTIONS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER SO THAT THE DOWN SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
3. SILT FENCE SHALL BE SECURELY FASTENED TO EACH SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE POSTS.
4. SILT FENCE SHALL MEET OR EXCEED REQUIREMENTS OF AASHTO M 288-00 AND POSTS AND WIRE MESH MATERIALS SHALL BE AS SPECIFIED IN THE "ILLINOIS URBAN MANUAL".
5. IN UNPAVED AREAS, CONSTRUCT SILT FENCE AROUND EACH EXISTING DRAINAGE INLET OR CATCH BASIN WITHIN 50 FEET OF EXCAVATIONS, WHETHER SHOWN OR NOT.
6. SILT FENCE SHALL BE CONSTRUCTED AROUND ALL EXCAVATED MATERIAL STOCKPILES THAT ARE TO REMAIN FOR LONGER THAN 72 HOURS. THE REQUIREMENTS OF THE MATERIALS MANAGEMENT PLAN ALSO MUST BE FOLLOWED.
7. IN LOCATIONS WHERE SILT FENCE IS TO BE INSTALLED TO PREVENT SOIL MOVEMENT ONTO ADJACENT WORK AREAS OR OFF OF PROJECT LIMITS, THE SILT FENCE SHALL BE INSTALLED ALONG THE WORK OR PROJECT DELINEATION LINE.
8. SEDIMENT BUILT UP AGAINST THE SILT FENCE WILL BE REMOVED AFTER IT HAS REACHED A HEIGHT EQUAL TO ONE-THIRD OF THE SILT FENCE HEIGHT.

SILT FENCE CONSTRUCTION DETAIL
NTS

2751

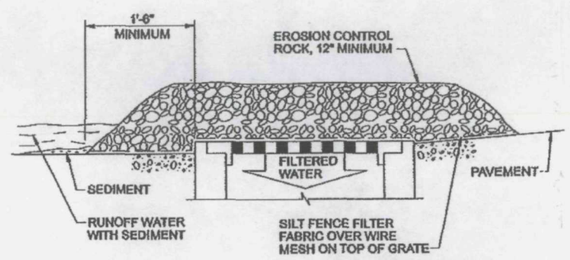


NOTES:

1. IF THERE IS A BERM AT THE TOP OF SLOPE, ANCHOR UPSLOPE OF THE BERM.
2. SLOPE SURFACE SHALL BE SMOOTH BEFORE PLACEMENT FOR PROPER SOIL CONTACT.
3. DO NOT STRETCH BLANKETS/MATTINGS TIGHT, ALLOW THE ROLLS TO MOLD TO ANY IRREGULARITIES.
4. STAPLES AND STAPLING PATTERN AS PER MANUFACTURER'S RECOMMENDATIONS.
5. LIME, FERTILIZE, MULCH AND SEED BEFORE INSTALLATION.

EROSION CONTROL MATTING DETAIL
NTS

2725



NOTES:

1. ROCK SHALL BE CLEAN (FREE OF FINES) COARSE AGGREGATE, SUCH AS SEWER STONE.
2. SILT FENCE SHALL MEET OR EXCEED REQUIREMENTS OF AASHTO M 288-00 AND WIRE MESH SHALL BE AS SPECIFIED IN THE "ILLINOIS URBAN MANUAL".
3. INLET PROTECTION SHALL BE USED IN PAVED AREAS WHERE SILT FENCE CANNOT BE INSTALLED AROUND THE PERIMETER OF THE INLET.
4. BUILT-UP SEDIMENT WILL BE REMOVED FROM THE INLET PROTECTION IF THE DEPTH OF SEDIMENT REACHES ONE-THIRD THE INLET PROTECTION'S HEIGHT.

INLET PROTECTION DETAIL
NTS

2782

NO.	DATE	DSGN	DR	CHK	APVD	BY	APVD
REVISION		R. STRYKER	M. REICHERT	R. STRYKER			

CH2MHILL

DEMOLITION
OMC PLANT 2
WAUKEGAN HARBOR
AREA OF CONCERN
WAUKEGAN, ILLINOIS

CIVIL

EROSION AND SEDIMENT CONTROL DETAILS

DATE	MAY 2008
PROJ	359748
DWG	C-2
SHEET	2

Attachment A

Aerial View

Figure A-1
Site Features
OMC Plant 2
Waukegan, Illinois

CH2MHILL

MKE \\WAVE\PROJ\EPA\186305-OMC\GIS_DATA\MXDS\2008\FINAL_DESIGN\FIGURE_A1_OMC_PLANT_2_SITE_FEATURES.MXD 6/17/2008 11:51:46

CONTRACT DOCUMENTS FOR

OUTBOARD MARINE CORPORATION PLANT 2 SITE

CONTENTS

VOLUME I

VOLUME II

DIVISION 00
PROCUREMENT AND CONTRACTING REQUIREMENTS

CONTENTS

SECTION 00 11 16
INVITATION TO BID

OMC PLANT 2 SUPERFUND SITE
SUPPLEMENTAL REMEDIAL ACTION

Your firm is invited to submit a bid for the project listed above. Sealed bids for the construction of the OMC Remedial Action III will be received at the office of **SulTRAC, 1 South Wacker Drive, Suite 3700, Chicago, Illinois 60606 until 2:00 PM on October 26, 2011.** All bids will then be opened and bid prices tabulated. Sealed envelopes or packages containing bids shall be addressed to **Ms. Rindy Mortensen** and shall be marked **"OMC Plant 2 Superfund Site – Supplemental Remedial Action."**

General Description of Work

The work area is at the OMC Plant 2 Superfund Site at 90 East Seahorse Drive, Waukegan, Illinois. The work to be performed is shown on the drawings. In general the project will include (1) installation of the silt fence and storm water protection, (2) soil excavation and transportation for landfill disposal, (3) dredge sediment from waterway and transportation for landfill disposal, (4) sediment capping with a geotextile fabric and rock armored surface, (5) concrete removal, (6) concrete crushing and placement on site, (7) extension of containment cell with TSCA-compliant landfill cover, (8) dune restoration, and (9) site restoration.

Contract Documents

A copy of all Contract Documents is on file and available for inspection at offices of SulTRAC in Chicago. The construction is being implemented by SulTRAC.

Bid Security

Each bid shall be accompanied by a bidder guaranty bond, certified or cashier's check or a satisfactory bid bond payable to SulTRAC in an amount not less than five percent (5%) of the total amount of the bid as a guarantee that the bidder will within fifteen (15) days after the date of the award of a contract execute an agreement and file bonds and insurance as required by the Contract Documents if his bid is accepted.

If an intended awardee fails to execute and file an agreement, bonds, and insurance as required by the Contract Documents, the amount of the security submitted with his bond may be forfeited as liquidated damages.

Federal and State Requirements

The attention of the bidders is directed to the applicable federal and state requirements and conditions of employment to be observed and minimum wage rates to be paid under the contract.

Before a contract is awarded, compliance with all U.S. EPA requirements specified in the Contract Documents will be subject to U.S. EPA review and approval.

Pre-Bid Conference and Site Visit

A pre-bid conference and site visit for all prospective bidders will be held at the site located at **90 East Seahorse Drive, Waukegan, Illinois on Thursday October 6, 2011**. A site visit will start after the meeting. The pre-bid site walk is mandatory in order to bid on the project. No allowance will be made later for site conditions existing at the time of the pre-bid site walk.

Award of Contract

The right is reserved to reject any Bid or all Bids not conforming to the intent and purpose of the Contract Documents, to postpone the award of Contracts for a period of time which shall not exceed beyond ninety (90) days from the Bid opening date, and to accept the Bid which is in the best interest of Owner.

Dated this _____ of _____, 2011

SulTRAC

By _____
Rindy Mortensen

TABLE OF CONTENTS

SECTION 00 21 13
INSTRUCTIONS TO BIDDERS

SECTION 00 21 13
INSTRUCTIONS TO BIDDERS

1. DEFINITION OF TERMS

Terms used in these Instructions to Bidders are defined in the General Terms and Conditions. The following additional terms used in these Instructions to Bidders shall have the meaning indicated for both the singular and plural.

1.1 Bidder - one who submits a bid directly to Contractor as distinct from a sub-bidder, who submits a bid to a Bidder

1.2 Successful Bidder - the lowest, responsible, and responsive Bidder to whom Contractor (on the basis of Contractor's evaluation as hereinafter provided) makes an award

1.3 Bidding Documents - the Invitation to Bid, Instructions to Bidders, the Bid Forms, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids)

2. EXAMINATION OF SITE

Each bidder, by making its bid, represents that it has visited the site and become familiar with all conditions under which the work is to be performed. No extra compensation will be allowed by reason of any matters or things concerning which the bidder did not inform itself prior to bidding.

3. EASEMENTS

Portions of the work for this project will be constructed on private property and public property for which easements (access agreements) have been secured. Work performed under or use of such easements shall be subject to the provisions of the easement agreements attached and open to inspection in the offices of Contractor.

4. EXAMINATION OF BIDDING DOCUMENTS

Each bidder, by making its bid, represents that it has read and understands the bidding documents. The bidder shall include in its bid prices any and all costs that may be necessary to complete the work in accordance with the requirements of the contract documents.

5. PROJECT FUNDING

This contract is expected to be funded with funds from the U.S. Environmental Protection Agency (U.S. EPA). Neither the U.S. EPA nor any of its departments or employees is or will be a party to this contract or any associated subcontract.

6. INTERPRETATION OF CONTRACT DOCUMENTS

The separate sections contained within these contract documents are intended to be mutually cooperative and to provide all details reasonably required for execution of the proposed work. Any person contemplating submission of a bid shall have thoroughly examined all the various parts of these documents. Any interpretation of the contract documents will be made in writing in the form of addenda issued by Contractor to all registered bid document holders. Contractor will not be responsible for any other explanations or interpretations of the contract documents.

7. MATERIAL SUBSTITUTION

Each bidder shall base its bid upon the materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. The successful subcontractor will not be allowed to make any substitutions on its own initiative. In each instance, the subcontractor will be required to obtain authorization from Contractor before installing any materials or equipment in variance with the requirements of the contract documents.

8. PREPARATION OF BID

Only bids made out on the Bid Form included in this document will be considered. Bid forms must be completed in ink. All blanks on the Bid Form must be completed. Amounts are to be shown in both words and figures. In case of a discrepancy between words and figures, the words shall be used unless it appears in Contractor's opinion that the words rather than the figures are clearly in error. If any portion of the bid is required to be given in unit prices and totals and if a discrepancy exists between the unit prices and totals, the unit prices shall be used unless it appears in Contractor's opinion that the unit prices rather than the totals are clearly in error. If a discrepancy exists between the total base bid and the true sum of the individual bid items, the true sum shall be used. A bid will be rejected if it does not contain a price for each item named in the bidding schedule. Bidders are warned against making any erasures or alterations. Bids that contain omissions, erasures, conditions, alterations, or additions not called for may be rejected.

9. CONSTRUCTION SEQUENCE

Along with the Bid, the Bidder shall provide a construction sequence detailing the order of activities. The sequence shall include scheduling of required plans, site preparation, coffer dam or equivalent installation, dredging method and timeframe, sediment dewatering approach and disposal, sediment capping, soil excavation, East Containment Cell Cap extension, dune excavation and restoration. Alternative approaches will be reviewed. Provide a detailed description of equipment, methods and procedures for any alternative proposed.

10. SIGNING OF BID

If the bidder is a corporation, the legal name of the corporation shall be set forth together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If the bidder is a co-partnership, the true name of the firm shall be set forth together with the signatures of all partners. If the bidder is an individual, his/her signature shall be inscribed. If signature is by an agent other than an officer of a corporation or a member of a partnership, a power of attorney

must be on file with Contractor prior to submitting bids; otherwise, the bid may be regarded as irregular.

11. BID SECURITY

No bid will be considered unless it is accompanied by a bid security as defined in the Invitation to Bid. The bid security is a guarantee that if the bid is accepted, the bidder will execute the agreement and file bonds and insurance as required by the contract documents within 15 days of the date of award of contract.

12. RETURN OF BID SECURITIES

The bid securities of the three lowest bidders will be retained until the successful bidder has executed the Agreement and furnished the required bonds and insurance and met the other conditions of the Notice of Award, whereupon the Bid Securities will be returned. The bid securities of all other bidders will be returned promptly after the bids have been opened and reviewed by Contractor. If all bids are rejected, the bid securities will be returned at the time of rejection.

13. AGREEMENT, BONDS, INSURANCE

The attention of bidders is specifically directed to the forms of agreement and bonds to be executed and the types of insurance to be taken out in the event a contract award is made.

14. DESIGNATION OF SUBCONTRACTORS

Each bidder shall list on the form included in these documents the names and addresses of all subcontractors who will perform work or labor or render service to the bidder on or about the construction site for compensation in an amount in excess of two percent of the bidder's total base bid. Each bidder shall show on the form the portion of the work to be done by each subcontractor. This form shall be included with the bid at the time of bidding or the bid may be considered nonresponsive. Any change in subcontractor must be formally approved by Contractor.

15. SALES TAX

The successful bidder shall pay sales taxes as required by the laws and statutes of the state and its political subdivisions. The estimated taxes shall be included in the lump sum and unit prices, as applicable.

16. FAILURE TO SUBMIT BID

Recipients of these bid documents not responding with bids need not return the bid documents. Instead, they should advise Contractor in writing of whether or not they want to be considered for similar work in the future. If a recipient does not submit a bid and does not notify Contractor of a desire to be considered for future work, the recipient's name may be removed from Contractor's source list.

17. CERTIFICATIONS AND REPRESENTATIONS

The certifications and representations included in the bid documents shall be completed, signed, and submitted with the bid.

18. BID SUBMITTAL

18.1 Each bid, properly signed, together with the bid security and all bidding documents shall be enclosed in a sealed envelope addressed and entitled as specified in the Invitation to Bid and shall be delivered to the office designated in the Invitation to Bid. All addenda issued shall be referenced with the bid at the time of bid submittal.

18.2 Each bidder shall also submit a letter from the bidder's insurance representative acknowledging the requirements of these specifications and its commitment to provide the coverage if the bidder is awarded a contract. The required coverage shall be provided by an insurance company having a Class A policyholder's rating and, at a minimum, a Class 10 financial rating in the latest edition of "Best Insurance Guide."

19. WITHDRAWAL OF BID

Any bid may be withdrawn at any time prior to the hour fixed in the Invitation to Bid for the opening of bids, provided that a request in writing executed by the bidder or its duly authorized representative for the withdrawal of the bid is filed with Contractor prior to the time specified for opening of bids. The withdrawal of a bid will not affect the right of a bidder to file a new bid.

20. QUALIFICATION OF BIDDERS

20.1 It is the intention of Contractor to award a contract only to a prequalified bidder that has furnished satisfactory evidence that it has the requisite experience and ability and sufficient capital, facilities, and plants to enable it to perform the work successfully and promptly and to complete the work within the time specified in the contract documents.

21. DISQUALIFICATION OF BIDDERS

21.1 More than one bid for the work described in these documents from an individual, firm, partnership, corporation, or association under the same or different names will not be considered. Reasonable grounds for believing that any bidder is interested in more than one bid for the work will cause the rejection of all bids in which that bidder is interested. If there are reasonable grounds for believing that collusion exists among bidders, the bids of the participants in such collusion will not be considered.

21.2 Bidders shall provide full, accurate, and complete information as required by the bid documents. Failure to do so may be grounds for disqualification.

22. NON-COLLUSION AFFIDAVIT

The attention of bidders is directed to the requirement that a non-collusion affidavit completely executed by each qualified bidder be submitted as part of the bid. The form of affidavit is included in these documents.

23. PENALTY FOR COLLUSION

If at any time it is found that the person, firm, or corporation to which the contract has been awarded has, in presenting any bid or bids, colluded with any other party or parties, then the contract awarded shall be null and void, the subcontractor and its sureties shall be liable to Contractor for all loss or damage Contractor may suffer thereby, and Contractor may advertise for new bids for the work.

24. LICENSE

Each bidder shall possess state and local licenses as required by law and shall furnish satisfactory proof to Contractor upon request that the licenses will be in effect during the entire period of the contract.

25. CERTIFICATION OF NONSEGREGATED FACILITIES

25.1 Each bidder by signing its bid will be deemed to have agreed to the provisions of the certification of nonsegregated facilities contained in these documents and agrees to submit a signed copy of the certification if awarded a contract. The certification provides that the bidder does not maintain or provide for its employees facilities that are segregated on a basis of race, creed, color, or national origin either by directive or on a de facto basis. The certification also provides that the bidder will not maintain segregated facilities. Failure of a bidder to agree to the certification of nonsegregated facilities will render the bid nonresponsive.

25.2 The successful bidder will be required to obtain from each of its subcontractors a signed certification of nonsegregated facilities prior to the award of a subcontract.

26. NONDISCRIMINATION IN EMPLOYMENT

By the submission of its bid, each bidder acknowledges that it understands and agrees to be bound by the equal opportunity requirements of U.S. EPA regulations [40 CFR Part 8, particularly Section 8.4(b)], which shall be applicable throughout the performance of work under any contract awarded pursuant to this solicitation. Each bidder agrees that if awarded a contract, it will similarly bind each subcontractor contractually. In implementation of the policies specified, each bidder further understands and agrees that if awarded a contract, it must engage in affirmative action directed at promoting and ensuring equal employment opportunity in the work force used under the contract and that it must contractually require the same effort of all subcontractors whose subcontracts exceed a value of $100,000. The bidder understands and agrees that "affirmative action" as used herein shall constitute a good-faith effort to achieve and maintain the amount of minority employment in the on-site work force used on the project that corresponds, for each trade used, to the minority population in the serving labor market area from which workers are reasonably available for hire for the project. The bidder shall make an effort to use Minority and Small Disadvantaged Business Enterprises and shall complete the Minority and Small

Disadvantaged Business Enterprise Certification with the bid submittal. The Subcontractor should be aware that the Office of Federal Contract Compliance Programs has stated that they expect to be on site to review compliance with EEO and affirmative action requirements.

27. WAGE RATE REQUIREMENTS

Wage rates for this project shall not be less than those stipulated in the prevailing wage rate determinations made by state and local authorities. In case of conflicts, the wage rates to be paid shall not be less than the highest of the prevailing wage determinations.

28. PRE-BID CONFERENCE

As stated in the Invitation to Bid, bidders are advised that a pre-bid conference will be held to explain affirmative action, equal employment opportunity, and minority business enterprise requirements for this project and to give instructions on the proper manner of filling out the required forms. The scheduled pre-bid site walk is mandatory in order to bid on the contract.

29. AWARD OF CONTRACT

29.1 The award of any contract will be made to the bidder whose bid is most responsive and is the best value for the EPA, price and other factors considered. Contractor reserves the right to reject any or all bids or to waive irregularities or informalities at its discretion.

29.2 This project is being financed by federal funds, and no award can be made until after approval has been given by the appropriate regulatory agencies. The timing of these approvals is beyond the control of Contractor, but Contractor will award a contract to the lowest responsible bidder or will reject bids as soon as possible after receipt of approvals from the agencies.

29.3 It is anticipated that such approvals will be received within 30 days of opening of bids. If the approvals are not received or if Contractor cannot award or reject bids within 90 days of the date of opening of bids, bidders shall have the right to withdraw their bids upon written notice to Contractor.

30. EFFECTIVE DATE OF AWARD

The award of contract shall be effective when formal notice of the award, signed by the authorized representative of Contractor, has been delivered to the intended awardee.

31. EXECUTION OF AGREEMENT

Copies of the agreement in the number stated in the form of agreement shall be executed by the successful bidder and delivered to Contractor within 7 days of the date of the award of contract. Required bonds and insurance shall be delivered at the same time. The effective date of bonds shall be the same as or later than the date of the agreement.

32. FAILURE TO EXECUTE AGREEMENT AND FILE BONDS AND INSURANCE

Failure of a successful bidder to execute the agreement and to file required bonds and insurance within the required time shall be just cause for annulment of the award of contract. Upon failure of a successful bidder to execute the agreement and to file required bonds and insurance within the required time, that bidder shall forfeit its bid security as specified herein. Upon such annulment of an award of contract, Contractor may then award a contract to the next lowest responsible bidder.

33. *NOTICE TO PROCEED*

It is expected that within 5 days but no more than 7 days of execution of the contract by both parties, a notice to proceed will be issued.

34. COMMENCEMENT AND COMPLETION OF WORK

The successful bidder shall commence work within 7 calendar days of issuance by Contractor of a written notice to proceed. The successful bidder shall complete all work in accordance with the terms and conditions of the contract documents by **June 30, 2012.**

End of Instructions to Bidder

SECTION 00 41 00
BID FORM
FOR
OMC PLANT 2 SUPERFUND SITE -
SUPPLEMENTAL REMEDIAL ACTION

Bidder's Name: _____

Business Address: _____

_____

Date: _____

To: SulTRAC

1 South Wacker Drive, Suite 3700, Chicago, Illinois 60606

The undersigned, as Bidder, declares that the only party or parties interested in this Bid as principal(s) are those named herein; that this Bid is made without collusion with any other person, firm, or corporation; that Bidder has carefully examined the location of the proposed work, the proposed forms of Agreement and Bonds, the Contract Drawings and Specifications for the above-designated work, and all other documents referred to or mentioned in the Contract Documents and the Contract Drawings and Specifications, including Addenda No. _____, _____, _____, and _____, issued thereto. Bidder proposes and agrees that if this Bid is accepted, Bidder will contract with SulTRAC, hereinafter called Engineer, in the form of the copy of the Agreement included in these Contract Documents, to provide all necessary machinery, tools, apparatus, and other means of construction, including utility and transportation services necessary to do all other work; to furnish all materials and equipment specified or referred to in the Contract Documents in the manner and time therein prescribed and according to the requirements as set forth therein to furnish Contractor's Bonds and Insurance specified in General Conditions of the Contract; to do all other things required of Contractor by the Contract Documents; and to take in full payment therefore the sums set forth in the following Bidding Schedule.

BIDDING SCHEDULE

A. UNIT PRICE CONSTRUCTION ITEMS

BID ITEM	UNIT	UNIT PRICE	QUANTITY	TOTAL PRICE
1. Performance and Payment Bonds	LS	$	1	$
2. Mobilization including delivery of equipment, site security, all preconstruction submittals and all other required preconstruction activities. (not to exceed 10% of the bid price)	LS	$	1	$
3. Site preparation including installation of temporary facilities, staging and stockpile areas, erosion and sediment controls, temporary fences, decon pad, and all other activities to prepare the site for removal of soil.	LS	$	1	$
4. Clearing and Grubbing, removal of all materials from Dune Area.	ACRE	$	1	$
5. Removal of exposed concrete slabs, footings, and basement area walls to base of excavation (based on in-place yards).	CY	$	4500	$
6. On-site crushing of Subtitle D concrete (based on in-place yards)	CY	$	4500	$
7. Excavation of Smelter Area Soil, as shown in the drawings, including excavation, survey of post-excavated area, and dust abatement (Based on in-place yards. Contractor to specify productivity rate in ton/day.)	TN	$	7,750	$
8. Excavation of dune area soil, as shown in the drawings, including excavation, survey of post-excavated area, and dust abatement (Based on in-place yards. Contractor to specify productivity rate in ton/day.)	TN	$	5,250	$
9. Transportation and disposal of SubTitle D non-hazardous soil (PCBs < 50 mg/kg), including all necessary access roads, transportation, processing as required for disposal, waste characterization if required by TSD, and off-site disposal costs .	TN	$	13,000	$
10. Transportation and disposal of TSCA soil (PCBs > 50 mg/kg), including all necessary access roads, transportation, processing as required for disposal, waste characterization if required by TSD, and off-site disposal costs	TN	$	1,666	$
11. On-site placement of crushed concrete, survey post-backfill (includes on-site hauling)	CY	$	4500	$
12. North Ditch – water management (install and remove coffer dam or equivalent and dewater)	LS	$	1	$
13. Off-site waterway – water management (install and remove coffer dam or equivalent and dewater)	LS	$	1	$
14. Excavation/dredging of sediment from off-site waterway, survey of pre- and post-excavated area (Based on in-place yards. Contractor to specify productivity rate in ton/day.)	TN	$	1017	$

BID ITEM	UNIT	UNIT PRICE	QUANTITY	TOTAL PRICE
15. Install liner in North Ditch, survey in-place liner	SF	$	25500	$
16. Backfill dunes with imported sand (procurement, transportation, and placement included), survey post-backfill	TN	$	5,250	$
17. Restoration of dunes area	AC	$	1.5	$
18. Extend cap to east of East Containment Cell, survey final cap installation	SF	$	6750	$
19. Demobilization, including site restoration, repair and removal of access and staging areas, removal of all temporary facilities and all closeout submittals, and removal of all construction equipment and materials from the site. Closeout Performance and Payment Bonds.	LS	$	1	$
21. *Subcontract Closeout*	LS	$	1	$

Notes:

All other work to be performed by the Contractor is considered incidental to bid items listed in this table and will not be paid for separately.

Total Bid Price $_____

(In words _____ Dollars and _____Cents)

BID CONDITIONS

It is expressly understood and agreed that the foregoing Total Base Bid is an estimated total price for establishing the amount of Bid Security on this bid on the **OMC Plant 2 Superfund Site – Supplemental Remedial Action** and that this bid is based on the unit prices. The actual payment amount (except for lump sum bid items) will be determined based on the actual quantities as measured in the field.

The undersigned has attended the pre-construction site walk, reviewed the existing site conditions and carefully checked the Drawings, Specifications, and other Contract Documents including all addenda issued before preparing this Bid.

BID SECURITY

Accompanying this Bid is a _____, in the amount of _____.

BIDDER'S SIGNATURE

Complete the applicable paragraph.

(a) Corporation

Bidder is a Corporation organized and existing under the laws of the State of _____ that operates under the legal name of _____,
and the full names of its officers are as follows:

President _____

Secretary _____

Treasurer _____

Manager _____

(b) Co-Partnership

Bidder is a Co-Partnership consisting of individual partners whose full names are as follows:
The Co-Partnership does business under the legal name of _____

_____.

(c) Individual

Bidder is an Individual whose full name is _____,
and if operating under a trade name, said trade name is _____.

(SEAL) _____
(Legal Entity)

_____

_____

Dated _____

Subscribed and sworn to before me this _____day of _____, 2011.

_____
(Notary Public)

SECTION 00 43 13
BID BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT _____, hereinafter called Principal, and _____, hereinafter called Surety, are jointly and severally held and firmly bound unto SulTRAC, hereinafter called Contractor, each in the penal sum of five percent of the Grand Total amount of the Bid Proposal of the Principal for the work, this sum not to exceed

_____DOLLARS OF LAWFUL MONEY OF THE UNITED STATES for the payment whereof unto Contractor, Principal and Surety jointly and severally bind themselves forever firmly by these Presents.

WHEREAS, Principal is herewith submitting its offer for the fulfillment of _____

_____

_____.

NOW, THEREFORE, the conditions of this obligation are such that if Principal is awarded the contract, and if Principal within the time specified in the bid for such contract enters into, executes, and delivers to Engineer an agreement in the form provided herein complete with evidences of insurance, and if Principal within the time specified in the payment bond proposal gives to Contractor the performance on the form provided herein, then this obligation shall be void; otherwise, Principal and Surety will pay unto Contractor the amounts of this Bond.

AND IT IS HEREBY DECLARED AND AGREED that Surety shall be liable under this obligation as Principal, and that nothing of any kind or nature whatsoever that will not discharge Principal shall operate as a discharge or a release of liability of Surety.

IT IS HEREBY DECLARED AND AGREED that this obligation shall be binding upon and insure to the benefit of Principal, Surety and Contractor and their respective heirs, executors, administrators, successors, and assigns.

SIGNED AND SEALED THIS _____ DAY OF _____, 2011.

_____

_____

_____

SECTION 00 43 36
PROPOSED SUBCONTRACTORS FORM

Each bidder shall set forth below: (a) the name and the location of the place of business of each subcontractor who will perform work or labor or render services to bidder in or about the construction of the work in an amount in excess of two percent (2%) of bidder's total base bid; and (b) the portion of the work which will be done by each subcontractor.

If bidder fails to specify a subcontractor for any portion of the work as stated above, he agrees to perform that work himself.

Bidder shall not, without written consent of Contractor, make any substitution, alterations, or additions to the following list of subcontractors which is made a part of this Bid.

Name of Subcontractor	Address of Shop, Mill, or Office	Class of Work	Portion of Work to be Done

Signed _____

SECTION 00 43 39
MINORITY AND SMALL DISADVANTAGED BUSINESS ENTERPRISE UTILIZATION CERTIFICATION

To be eligible for award of this Contract, each bidder must execute and submit, to Contractor as part of their proposal and together with their bid, the following certification relating to Minority and Small Disadvantaged Business Enterprises (MBE and SDBE) participation. The certification below shall be *deemed a part of the resulting Contract. THEREFORE, A FAILURE TO COMPLETE AND SUBMIT* THIS CERTIFICATION OR THE SUBMITTAL OF A FALSE CERTIFICATION SHALL BE CONSIDERED CONCLUSIVE EVIDENCE THAT THE PROPOSAL OR BID IS NONRESPONSIVE AND THEREFORE SUBJECT TO REJECTION BY the Contractor.

Certification

_____, the Bidder, hereby certifies that it is aware that the Owner would like participation by MBEs and SDBEs, respectively, and hereby certifies that it has achieved the following MBE and SDBE participation for this Contract.

MBE $ _____
SDBE $ _____

It is further certified that Bidder understands that agreements between bidders and MBE and SDBE subcontractors or suppliers in which any MBE and SDBE subcontractor or supplier promises not to provide sub-bids or subcontracting quotations to other bidders is prohibited by law. Bidder certifies that he/she has no knowledge of any such promises in connection with the Contract.

FIRM NAME: _____
ADDRESS: _____
BY: _____ Title: _____
Authorized Official Date: _____

MINORITY AND SMALL DISADVANTAGED BUSINESS ENTERPRISES TO BE UTILIZED

Project: OMC Plant 2 Superfund Site – Supplemental Remedial Action

Name of Bidder: _____

Name of MBE or SDBE: _____ _____ *MBE*

Address: _____ _____ SDBE

Phone: _____ _____ Joint Venture ___%

Description of Work Element or Supplies: _____ *Other*

_____ _____ Subcontractor

Amount to be contracted: $ _____ _____ Supplier

Manufacturer: _____

Name of MBE or SDBE: _____ _____ MBE

Address: _____ _____ SDBE

Phone: _____ _____ Joint Venture ___%

Description of Work Element or Supplies: _____ Other

_____ _____ Subcontractor

Amount to be contracted: $ _____ _____ Supplier

Manufacturer: _____

Name of MBE or SDBE: _____ _____ MBE

Address: _____ _____ SDBE

Phone: _____ _____ Joint Venture ___%

Description of Work Element or Supplies: _____ Other

_____ _____ Subcontractor

Amount to be contracted: $ _____ _____ Supplier

Manufacturer: _____

Bidder _____

Signature _____

DATE _____

SECTION 00 45 16
CONTRACTOR'S COMPLIANCE STATEMENT AND CERTIFICATION

The undersigned bidder certifies that it is qualified to bid on the _____ _____ *project and has fully and faithfully* complied, and will continue to comply, with all Owner Equal Employment Opportunity/Affirmative Action and Labor Standards requirements as set forth in the bid specifications and that any and all documentation and forms submitted herewith and henceforth to demonstrate such compliance are true and accurate.

The undersigned also certifies that it _____has or _____has not participated in previous contracts or subcontracts funded by Owner or other agencies subject to federal Executive Order 11246 or other similar orders.

The undersigned further certifies that it is aware of the differences, if any, between State and Federal prevailing wage rates and will pay the higher of these rates to each laborer, workman, and mechanic employed on this project.

Bidder: _____

Address: _____

Phone: _____

Signature: _____

Printed Name and Title: _____

SECTION 00 45 19
NON-COLLUSION AFFIDAVIT

STATE OF _____)

COUNTY OF _____)

_____, being

first duly sworn on oath deposes and says that he is _____
(Attorney-in-Fact or Agent)

of _____ Surety on the attached BID on _____
(Bonding Company)

_____ executed by _____
(Bidder)

Affiant further deposes and says that no officer, official, or employee of the Owner has any interest directly or indirectly, or is receiving any premium, commission fee, or other thing of value on account of the same or furnishing of bond, undertaking or contract or indemnity, guaranty or surety-ship in connection with the above-mentioned BID.

Signed _____

Subscribed and sworn to before me
this _____ day of _____, A.D., 2011

_____
(Notary Public)

County _____

My Commission Expires _____

SECTION 00 45 33
CERTIFICATION OF NONSEGREGATED FACILITIES

Construction Subcontractor certifies that he/she does not maintain or provide for his/her employees any segregated facilities at any of his/her establishments, and that he/she does not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. Construction Contractor certifies further that he/she will not maintain or provide for his/her employees any segregated facilities at any of his/her establishments, and that he/she will not permit his/her employees to perform their services at any location, under his/her control, where segregated facilities are maintained. Construction Subcontractor agrees that a breach of this certification is a violation of the Equal Opportunity clause in this Contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms, washrooms, restaurants and other eating areas, time clocks, locker rooms, entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. Construction Subcontractor agrees that (except where he/she has obtained identical certifications from proposed contractors for specific time periods) he/she will obtain identical certifications from proposed subcontractors prior to the award to subcontractors, and that he/she will retain such certification in his/her files.

_____ _____

Signature Date

_____

Name and Title of Signed (please type)

SECTION 00 52 00
AGREEMENT FORM

AGREEMENT
FOR
OMC PLANT 2 SUPERFUND SITE
SUPPLEMENTAL REMEDIAL ACTION

This Agreement made this _____ **day of** _____, **2011**, by and between SulTRAC, hereinafter called Contractor and_____ hereinafter called Subcontractor.

WITNESSETH:

WHEREAS, Contractor has solicited bids for all the work required to complete the hereinafter specified OMC Remedial Action, and

WHEREAS, Contractor did on the _____ day of _____, 2011, find that Subcontractor was the lowest responsive responsible bidder for the hereinafter specified work and did award Subcontractor a contract for said work.

NOW, THEREFORE, for and in consideration of their mutual promises, covenants, undertaking, and agreements, the parties hereto do hereby agree as follows:

I. Subcontractor agrees, at its own cost and expense, to do all the work and to furnish all the labor, materials, equipment, and other property necessary to do, construct, install, and complete all the work and improvements included in the system. Subcontractor agrees to do all work in full accordance with and in compliance with and as required by the hereinafter specified Contract Documents for said work, and to do, at its own cost and expense, all other things required of Subcontractor by said Contract Documents for said work.

II. The Contract Documents are defined in the General Terms and Conditions.

III. Subcontractor agrees to receive and accept the following unit prices and lump sum prices as full compensation for furnishing all materials and equipment and for doing all the work contemplated and embraced in this Agreement; also for all loss or damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any unforeseen difficulties or obstructions which may arise or be encountered in the prosecution of the work until its acceptance by Contractor, and for all risks and every description connected with the work; also for well and faithfully completing the work, and the whole thereof, in the manner and according to and in compliance with the Contract Documents and the requirements of Contractor under them, also for any and all things required by the Contract Documents, to wit:

OMC Plant 2 Superfund Site – Supplemental Remedial Action the price is as follows:

BID ITEM	UNIT	UNIT PRICE	QUANTITY	TOTAL PRICE
1. Performance and Payment Bonds	LS	$	1	$
2. Mobilization including delivery of equipment, site security, all preconstruction submittals and all other required preconstruction activities. (not to exceed 10% of the bid price)	LS	$	1	$
3. Site preparation including installation of temporary facilities, staging and stockpile areas, erosion and sediment controls, temporary fences, decon pad, and all other activities to prepare the site for removal of soil.	LS	$	1	$
4. Clearing and Grubbing, removal of all materials from Dune Area.	ACRE	$	1	$
5. Removal of exposed concrete slabs, footings, and basement area walls to base of excavation (based on in-place yards).	CY	$	4500	$
6. On-site crushing of Subtitle D concrete (based on in-place yards)	CY	$	4500	$
7. Excavation of Smelter Area Soil, as shown in the drawings, including excavation, survey of post-excavated area, and dust abatement (Based on in-place yards. Contractor to specify productivity rate in ton/day.)	TN	$	8333	$
8. Excavation of dune area soil, as shown in the drawings, including excavation, survey of post-excavated area, and dust abatement (Based on in-place yards. Contractor to specify productivity rate in ton/day.)	TN	$	5000	$
9. Transportation and disposal of SubTitle D non-hazardous soil (PCBs < 50 mg/kg), including all necessary access roads, transportation, processing as required for disposal, waste characterization if required by TSD, and off-site disposal costs .	TN	$	12,417	$
10. Transportation and disposal of TSCA soil (PCBs > 50 mg/kg), including all necessary access roads, transportation, processing as required for disposal, waste characterization if required by TSD, and off-site disposal costs	TN	$	916	$
11. On-site placement of crushed concrete, survey post-backfill (includes on-site hauling)	CY	$	4500	$
12. North Ditch – water management (install and remove coffer dam or equivalent and dewater)	LS	$	1	$
13. Off-site waterway – water management (install and remove coffer dam or equivalent and dewater)	LS	$	1	$
14. Excavation/dredging of sediment from off-site waterway, survey of pre- and post-excavated area (Based on in-place yards. Contractor to specify productivity rate in ton/day.)	TN	$	1017	$
15. Install liner in North Ditch, survey in-place liner	SF	$	25500	$

BID ITEM	UNIT	UNIT PRICE	QUANTITY	TOTAL PRICE
16. Backfill dunes with imported sand (procurement, transportation, and placement included), survey post-backfill	TN	$	5000	$
17. Restoration of dunes area	AC	$	1.5	$
18. Extend cap to east of East Containment Cell, survey final cap installation	SF	$	6750	$
19. Demobilization, including site restoration, repair and removal of access and staging areas, removal of all temporary facilities and all closeout submittals, and removal of all construction equipment and materials from the site. Closeout Performance and Payment Bonds.	LS	$	1	$
21. Subcontract Closeout	LS	$	1	$

Notes:

All other work to be performed by the Contractor is considered incidental to bid items listed in this table and will not be paid for separately.

Total contract amount for all work required to complete the OMC Plant 2 Superfund Site – Supplemental Remedial Action $_____

IV. In the event that any provision in any of the following component parts of this Contract conflicts with any provision in any other of the following parts, the provision in the component part first enumerated below shall govern over any other component part which follows it numerically, except as may be otherwise specifically stated. Said component parts are as follows:

1. Addendum Nos. _____
2. Special Conditions
3. General Conditions
4. Specifications
5. Contract Drawings
6. Instructions to Bidders
7. Invitation to Bid
8. Contractor's Bid
9. The Agreement

This Subcontract is intended to conform in all respects to applicable statutes of the State of Illinois and if any part or provision of this Contract conflicts therewith the said statute shall govern.

V. Subcontractor agrees to commence work under this Contract within 10 calendar days of receipt of a written notice to proceed and to complete all work included in this Contract to the point of final acceptance by Contractor within 180 calendar days from the date of the notice to proceed.

Subcontractor shall, and agrees to, furnish and deliver to Contractor the Payment Bond, the Performance and Indemnity Bond, and the insurance certificates and policies of insurance required of Subcontractor by provisions of the Contract Documents, and to do, prior to starting work, all other things which are required of Subcontractor by the Contract Documents as a prerequisite of starting work.

VI. Contractor agrees with said Subcontractor to employ, and does hereby employ, the said Subcontractor to provide the materials and to do all the work and all the other things hereinabove contained or referred to, for the prices aforesaid, and Contractor hereby contracts to pay the same at the time, in the manner, and upon conditions set forth or referred to in the Contract Documents. The said parties for themselves, their heirs, executors, administrators, successors, and assigns, do hereby agree to the full performance of covenants herein contained.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their daily authorized officials, this Agreement in three original counterparts, each of which shall be deemed an original, on the date first above written.

ENGINEER

Sullivan International Group, Inc.

By _____

Attest _____ Name _____

Title _____ Title _____

Tetra Tech EM Inc.

By _____

Attest _____ Name _____

Title _____ Title _____

SUBCONTRACTOR

_____

(SEAL)

By _____

Attest _____ Name _____

Title _____ Title _____

SECTION 00 52 01
NOTICE OF AWARD

To: _____
(Subcontractor's Name)

_____
(Subcontractor's Address)

_____

Project: OMC Plant 2 Superfund Site – Supplemental Remedial Action_____

_____

_____

Contractor has considered the Bid submitted by you for the above described Work in response to its Advertisement for Bids dated __ day of _____, 2011, and Instructions to Bidders. You are hereby notified that your Bid has been accepted for the Work in the amount of $_____.

You are required by the Instructions to Bidders to execute the Agreement and furnish the required Subcontractor's Performance Bond, Payment Bond, and Certificates of Insurance within 10 calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said Bonds and Certificates of Insurance within 10 calendar days from the date of this Notice, Contractor will be entitled to consider all your rights arising out of Contractor's acceptance of your Bid as abandoned and as a forfeiture of your Bid Bond. Contractor will be entitled to such other rights as may be granted by Law.

You are required to return an acknowledged copy of this Notice of Award to Contractor.

Dated this _____ day of _____, 2011.

_____
(Contractor)

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged

By _____

this _____ day of _____, 2011

By _____

Title _____

SECTION 00 55 00
NOTICE TO PROCEED

Date: _____

To: _____
(Subcontractor's Name)

_____
(Subcontractor's Address)

_____

Project: _____

_____

_____

You are hereby notified to commence Work in accordance with the Agreement, dated _____, 2011, on or before _____, 2011 and you are to complete the Work within _____ consecutive calendar days thereafter.

The date of completion of All Work under this project is therefore June 30, 2012.

_____
(Contractor)

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged

By _____

this _____ day of _____, 2011
By _____

Title _____

SECTION 00 61 13.13
PERFORMANCE BOND FORM

KNOW ALL MEN BY THESE PRESENTS: THAT BOND NO. _____

_____
(Name of Subcontractor)

_____
(Address of Subcontractor)

a _____, hereinafter called Principal,
(Corporation, Partnership, or Individual)

and _____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

_____
(Name of Contractor)

_____
(Address of Contractor)

hereinafter called Contractor, in the penal sum of _____

Dollars, ($_____)

in lawful money of the United States for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly to these Presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, on this _____day of _____, 2011, the said Principal herein made and entered into a certain Contract with Contractor by the terms, conditions, and provisions of which Contract the said Principal herein agrees to furnish all materials and complete all the work covered by the Contract for the construction of the _____in accordance with maps, Plans and Specifications, made a part hereof, as fully as for all purposes as if here set forth in length.

NOW, THEREFORE, if Subcontractor shall in all things perform all the terms and conditions of the within and foregoing Contract as provided in the Contract Documents to be by such Contractor performed, and shall honor all claims for defective work made within 1 year after the completion and acceptance of the foregoing Contract, and shall pay over, make good and reimburse to Contractor, all loss or damage which Contractor may sustain by reason of failure or default on the part of Subcontractor, then this obligation shall be void; otherwise it shall remain in full force and effect.

PROVIDED, HOWEVER, that no final settlement between Contractor and Subcontractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

PROVIDED, FURTHER, that Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the Contract Documents or to the Work to be performed thereunder, shall in any wise effect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract Documents.

IN WITNESS WHEREOF, the above parties bounded together have executed this instrument this ____ day of _____, 2011.

SUBCONTRACTOR

_____

By _____ (Seal)

Attest

SURETY

_____

By _____ (Seal)

Attest

APPROVED AS TO FORM: _____, 2011
Contractor

By _____

NOTE: The Surety named on this bond shall be one who is licensed to conduct business in the state where the project is located, and named in the current list of Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies, as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All bonds signed by an agent must be accompanied by a certified copy of the authority to act for Surety at the time of the signing of this bond.

SECTION 00 61 13.16
PAYMENT BOND FORM

KNOW ALL MEN BY THESE PRESENTS: THAT BOND NO. _____

_____
(Name of Subcontractor)

_____
(Address of Subcontractor)

a _____, hereinafter called Principal,
(Corporation, Partnership, or Individual)

and _____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

_____
(Name of Contractor)

_____
(Address of Contractor)

hereinafter called Contractor, in the penal sum of _____

Dollars, ($_____)

in lawful money of the United States for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly to these Presents.

THE CONDITION OF THIS OBLIGATION is such that whereas Principal entered into a certain contract with , dated the _____ day of _____, 2011, a copy of which is hereto attached and made a part hereof for the construction of:

_____

_____

_____

NOW, THEREFORE, if Principal shall promptly make payment to all persons, firms, Subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the Work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such Work, and all insurance premiums on said Work, and for all labor, performed in such WORK whether by Subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the Work to be performed there under or the Specifications accompanying the same shall in any wise affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the Work or to the Specifications.

PROVIDED, FURTHER, that no final settlement between Contractor and Subcontractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of
(number)

which shall be deemed an original, this the _____ day of _____, 2011

SIGNED AND SEALED THIS _____ DAY OF _____, 2011

ATTEST:

_____
Principal

(Principal Secretary)
(SEAL) BY _____

_____
(Address)

_____

_____
Witness as to Principal

_____
(Address)

_____

_____
Surety

ATTEST: By _____
(Attorney-in-Fact)

_____ _____
Witness as to Surety (Address)

_____ _____
(Address)

_____

NOTE: Date of Bond must not be prior to date of Contract.
If Subcontractor is Partnership, all partners should execute Bond.

IMPORTANT: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

SECTION 00 62 16
CERTIFICATE OF INSURANCE FORM

Date _____

THIS IS TO CERTIFY TO _____
(Name of Certificate-holder)

of _____
(Address of Certificate-holder)

that on the above date the following described insurance policies, issued by this Company, are in full force and effect:

Name of Insured _____

Address of Insured _____

TYPE OF INSURANCE		POLICY NUMBER	POLICY PERIOD	LIMITS OF LIABILITY	
				BODILY INJURY	PROPERTY DAMAGE
WORKMEN'S COMPENSATION				STATUTORY	NO COVERAGE
and EMPLOYER'S LIABILITY					NO COVERAGE
COMPREHENSIVE GENERAL LIABILITY				$ EACH OCCURRENCE $ AGGREGATE	$ EACH OCCURRENCE $ AGGREGATE
COMPREHENSIVE AUTOMOBILE LIABILITY				$ EACH PERSON $ EACH OCCURRENCE	$ EACH OCCURRENCE
Auto Liability	OWNED AUTOS			$ EACH PERSON $ EACH OCCURRENCE	$ EACH OCCURRENCE
	HIRED AUTOS			$ EACH PERSON $ EACH OCCURRENCE	$ EACH OCCURRENCE
	OTHER NON-OWNED AUTOS			$ EACH PERSON $ EACH OCCURRENCE	$ EACH OCCURRENCE
OTHER					
DESCRIPTION AND LOCATION OF OPERATIONS					

ABOVE POLICIES INCLUDE THE FOLLOWING COVERAGES:

- ☐ PREMISES - OPERATIONS - ESCALATORS
- ☐ CONTRACTOR'S PROTECTIVE (INDEPENDENT CONTRACTORS)
- ☐ PRODUCTS - COMPLETED OPERATIONS
- ☐ PERSONAL INJURY (FALSE ARREST, LIBEL, WRONGFUL EVICTION, ETC.)
- ☐ BROAD FORM P.D.
- ☐ XCU EXCLUSIONS DELETED WHERE APPLICABLE
- ☐ CONTRACTOR LIABILITY WITH RESPECT TO HOLD HARMLESS AGREEMENT AS STATED IN THE CONTRACT DOCUMENTS

IN THE EVENT OF MATERIAL CHANGE OR CANCELLATION AT LEAST (30) DAYS ADVANCE NOTICE WILL BE GIVEN IN WRITING TO CERTIFICATE HOLDER BY REGISTERED MAIL.

NAME OF INSURANCE COMPANY	NAME OF AGENCY	ISSUED AT
ADDRESS	AUTHORIZED AGENT	DATE

SECTION 00 62 99
SUBCONTRACTOR'S NOTIFICATION OF
SUBCONTRACTORS AND SUPPLIERS TO BE UTILIZED

Project: _____ Page _____ of _____

Subcontractor's Name: _____ Date _____

Contractor's Name, Telephone Number, Address, Zip Code, and Owner	Work Element or Supplies	Contract Amount	Estimated	
			Start Date	Completion Date

TABLE OF CONTENTS

SECTION 00 72 00
GENERAL TERMS AND CONDITIONS

SECTION 00 72 00

GENERAL TERMS AND CONDITIONS

1. DEFINITIONS

Wherever used in these General Terms and Conditions or in other contract documents, the following terms shall have the meanings indicated for both the singular and plural.

1.1 "Addenda" -- Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

1.2 "Agreement" -- The written agreement between Contractor and Subcontractor covering the work to be performed; other Contract Documents are attached to the Agreement and become part of it.

1.3 "Application for Payment" -- The form accepted by Contractor which is to be used by Subcontractor in requesting progress payment or final payment and should include such supporting documentation as is required by the Contract Documents. A copy of the form is bound with these Contract Documents.

1.4 "As directed," "as permitted," "reviewed," "acceptable," "approved," and similar words mean the direction, requirements, permission, approval, or acceptance of Contractor unless stated otherwise.

1.5 "As shown," "as indicated," "as detailed," and similar words refer to drawings unless stated otherwise.

1.6 "Bid" -- The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.7 "Bidding Documents" -- Advertisement or Invitation to Bid, Instructions to Bidders, the Bid Form, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

1.8 "Bidding Requirements" -- The Advertisement or Invitation to Bid, Instructions to Bidders, and the Bid Form.

1.9 "Bonds" -- Performance and Payment bonds as well as other instruments of security.

1.10 "Change Order" -- A written document recommended by Contractor, which is signed by Subcontractor and Contractor authorizing an addition, deletion, or revision of the work or an adjustment in the Contract Price or Time, issued on or after the effective date of the Agreement.

1.11 "Contract Documents" -- The Agreement, Addenda (which pertain to the Contract Documents), Subcontractor's Bid (including documentation accompanying the Bid and any post-Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Terms and

Conditions, the Specifications, and the Drawings, together with all written Amendments, Change Orders, Work Change Directives, Field Orders issued on or after the Effective Date of the Agreement. Shop drawings submittals approved are not Contract Documents.

1.12 "Contract Price" -- The money payable by Contractor to SubSubcontractor under the Contract Documents as stated in the Agreement and subject to the approximate quantities provisions in the instructions to Bidders in the case of Unit Price work.

1.13 "Contract Time" -- The number of days or the date stated in the Agreement for the completion of the Work so that it is ready for final payment.

1.14 "Contractor" -- SulTRAC, Chicago, Illinois, acting through its authorized representatives. SulTRAC is a Joint Venture between Tetra Tech EM Inc. and Sullivan International Group Inc.

1.15 "Day" -- A calendar day of twenty-four hours measured from midnight to the next midnight.

1.16 "Defective" -- An adjective referring to work that is unsatisfactory, faulty, deficient, does not conform to Contract Documents, does not meet the requirements of the inspections, reference standards, tests, or approval referred to in the Contract Documents, or has been damaged prior to Engineer's recommendation of final payment.

1.17 "Drawings" -- The drawings which show the scope, extent, and character of the work to be performed by Subcontractor and which have been prepared or approved by Contractor and are referred to in the Contract Documents. Shop drawings are not Drawings as so defined.

1.18 "Effective Date of the Agreement" -- The date the Agreement becomes effective. If no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

1.19 "Engineer" -- SulTRAC, Chicago, Illinois, acting through its authorized representatives. SulTRAC is a Joint Venture between Tetra Tech EM Inc. and Sullivan International Group Inc.

1.20 "Field Order" -- A written order issued by Engineer requiring a minor change in the work, without involving a change in Contract Price or Time.

1.21 "Final Acceptance" -- The date when the construction of the project is complete in accordance with the Contract Documents. In the final Application for Payment, all monies due SubSubcontractor have been paid.

1.22 "General Requirements" -- Sections of Division 1 of the specifications.

1.23 "Inspector" -- The engineering or technical inspector duly authorized or appointed by Engineer for the particular duties entrusted to him.

1.24 "Major Equipment" -- The equipment itemized by name in the Bid Form and in the Agreement and which are to be furnished and installed under the Contract.

1.25 "Modification" -- A written amendment to the Contract Documents, a Change Order, or a Field Order. A modification may only be issued after the effective date of the Agreement.

1.26 "Notice" -- The term "notice" or the requirement to notify, as used in the Contract Documents or applicable state or federal statutes, signifies a written communication delivered in person or by certified or registered mail to an individual, a member of a firm, or to the officer of the corporation for whom it is intended. Certified or registered mail shall be addressed to the last known address.

1.27 "Notice of Award" -- The written notice by Engineer to the apparent successful Bidder stating that upon compliance by the apparent successful Bidder with the conditions precedent enumerated therein, within the time specified, Engineer will sign and deliver the Agreement. Notice of Award is contingent upon specified pre-award activities.

1.28 "Notice to Proceed" -- A written notice given by Contractor to Subcontractor fixing the date. Contract Time will commence and Subcontractor shall begin fulfilling Subcontractor's obligation under the Contract Documents.

1.29 "Or Equal" -- The term "or equal" indicates a product that is the same or better in terms of function, performance, reliability, quality, and general configuration. Determination of equality in reference to the project design requirements will be made by Subcontractor. Such equal products shall not be purchased or installed by the Subcontractor without written authorization.

1.30 "Obligee" or "Owner/Obligee" or "Owner/Contractor/Engineer" -- For this project, U.S. Environmental Protection Agency and SulTRAC

1.31 "Owner" -- U.S. Environmental Protection Agency (Assisted by SulTRAC)

1.32 "Project" -- The total construction, where the work to be provided under the Contract Documents may be the whole or a part, as indicated in the Contract Documents.

1.33 "Provide" -- When used in the specifications, this term means to furnish and install.

1.34 "Resident Project Representative" -- The authorized representative of Contractor/Engineer assigned to the site or any part of the site.

1.35 "Shop Drawings" -- All drawings, diagrams, illustrations, schedules, and other data specifically prepared by or for Subcontractor to illustrate some portion of the work. Shop drawings may include illustrations, brochures, standard schedules, performance charts, instructions, diagrams, and other information prepared by a supplier and submitted by Subcontractor to illustrate material or equipment for some portion of the work.

1.36 "Site Safety Plan" -- The term "Site Safety Plan" refers to the plan prepared by Subcontractor that describes expected safety practices at the project site, required levels of protection relative to the hazardous material (if any), and operational constraints at or near the site.

1.37 "Specifications" -- Technical descriptions of materials, equipment, construction systems, standards, and workmanship as applied to the work and to certain administrative details associated with it.

1.38 "Subcontractor" -- The person, firm, or corporation with whom Contractor has entered into the Agreement. May also include individual, firm, or corporation having a direct contract with the Subcontractor.

1.39 "Substantial Completion" -- The date as certified by Contractor when the construction of the project or a specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the project or specified part can be utilized for the purposes for which it is intended.

1.40 "Supplier" -- A manufacturer, fabricator, supplier, distributor, material handler, or vendor.

1.41 "Work" -- All labor necessary to produce the construction required by the Contract Documents, and all material and equipment incorporated or to be incorporated in the project.

2. CONTRACT DOCUMENTS

2.1 General

The Contract Documents include the following general classifications of documents and include all additions, deletions, and modifications incorporated therein before the execution of the Agreement:

2.1.1 Bidding Documents

2.1.2 Contractual Documents

2.1.3 Conditions of the Contract

2.1.4 Specifications

2.1.5 Drawings

2.2 Bidding Documents

The Bidding Documents issued by Contractor to assist bidders include:

2.2.1 Invitation to Bid bound herewith

2.2.2 Instructions to Bidders bound herewith

2.2.3 The Bid to perform the work described in the Contract Documents, properly signed and guaranteed.

2.2.4 Any Addenda issued during the time of bidding or forming a part of the Contract Documents shall be covered in the bid and shall be made a part of the Contract. Receipt of each addendum shall be acknowledged in the Bid.

2.3 Contractual Documents

2.3.1 Agreement – The Agreement covers the performance of the work described in the Contract Documents, including all supplemental addenda and all general and special provisions pertaining to the work or materials. The Agreement form is bound herewith.

2.3.2 Bonds -- At the time of execution of the Agreement, Subcontractor shall furnish the following bonds payable to Contractor in the form set forth herein, secured by a surety company acceptable to Contractor.

2.3.2.1 Faithful Performance Bond in an amount equal to 100 percent of the total Contract Amount, conditioned upon the faithful performance of all covenants and stipulations under the contract. The bond shall hold good for a period of one year after the final acceptance of the work to protect Contractor against the results of defective materials, workmanship, and equipment during that time.

2.3.2.2 Payment Bond in an amount equal to 100 percent of the total Contract Amount for the payment of all persons, companies, or corporations who provide labor or furnish material to be used in the work under this Contract.

2.3.2.3 It is the responsibility of Subcontractor to notify all surety companies and other signers of the bonds listed above, in order for surety companies to familiarize themselves with all of the conditions and provisions of this Contract. All surety companies and other signers shall waive their right of notification by Contractor of any change or modification of this Contract, or of decreased or increased work, or of the cancellation of this Contract, or of any other acts by Contractor or its authorized employees or agents under the terms of this contract. The waiver by the surety companies and other signers shall in no way relieve the surety companies and other signers of their obligations under this Contract.

2.4 Conditions of the Contract

The Conditions of the Contract include the following:

2.4.1 General and Special Conditions of the Contract bound herewith.

2.4.2 Federal laws and regulations applicable to this contract and bound herewith.

2.4.3 State laws and regulations applicable to this contract.

2.5 Specifications and Drawings

2.5.1 Contract Specifications bound herewith and listed in the table of contents of these Contract Documents.

2.5.2 Contract Drawings including but not limited to those listed the Contract Documents.

2.6 Discrepancies

Any discrepancies found between the Drawings and Specifications and the site conditions or any inconsistencies or ambiguities in the Drawings or Specifications shall be immediately reported to Contractor, who shall promptly correct such inconsistencies or ambiguities in writing. Any work done by Subcontractor after such findings, until authorized, will be done at Subcontractor's risk.

2.7 Interpretation of Specifications and Drawings

The Contract Specifications and the Contract Drawings are intended to be explanatory of each other. Any work indicated on the Drawings and not in the Specifications, or vice versa, is to be executed as if indicated in both. In the event of any doubt or question arising respecting the true meaning of the Specifications or Drawings, reference shall be made to Contractor and his decision thereof shall be final.

2.8 Dimensions

Finished surfaces in all cases shall conform with the lines, grades, cross-sections, and dimensions shown on the Drawings. Deviations from the Drawings, as may be required by the exigencies of construction, will be determined by Contractor and authorized in writing by Contractor. If additional dimensions are required, they shall be requested from Contractor.

2.9 Titles and Headings

2.9.1 The titles and subheadings printed on Drawings, in General Terms and Conditions, in Specifications, and elsewhere in the Contract Documents are inserted for the convenience of reference only, and shall not be taken or considered as having any bearing on the interpretation therefore.

2.9.2 Separation of the Specifications into divisions and sections shall not operate to make Subcontractor an arbiter to establish limits of work between Subcontractor and their Subcontractors, or between trades.

2.10 Additional Drawings and Instructions

2.10.1 The Drawings and Specifications are intended to be comprehensive and to indicate in more or less detail the scope of the work. Should it appear that the work to be done, or any of the matters relative thereto, is not sufficiently detailed or explained in these Contract Documents, including the Drawings, Subcontractor

shall apply to Contractor for such further explanations as may be necessary and shall conform thereto as part of this Contract, so far as may be consistent with the terms of the Contract.

2.10.2 In addition to these explanations Contractor may furnish additional drawings and instructions from time to time during the progress of the work to clarify or to define in greater detail the intent of the Specifications and Drawings. Contractor shall make his work conform to all such additional drawings and instructions.

2.11 Copies Furnished

2.11.1 Contractor will furnish to Subcontractor, free of charge, 3 copies of the Contract Documents

2.11.2 Additional sets will be furnished at printing cost, based upon commercial printing rates.

3. OWNER-SUBSUBCONTRACTOR-SUBCONTRACTOR RELATIONS

3.1 Relationship of Parties

Subcontractor, including its employees, agents or representatives, shall be deemed an independent Subcontractor and not an agent or employee of Contractor. All benefits, coverages and claims of its employees shall be the sole obligation of Subcontractor. Unless specifically authorized by Contractor, Subcontractor shall have no authority to make commitments of any kind on behalf of Contractor.

3.2 Rights-Of-Way

Owner will provide all rights-of-way and easements for the work to be constructed by Subcontractor under this Contract.

3.3 Surveys and Staking

Contractor has established the construction grade for the proposed work as indicated on the Drawings. Subcontractor will be responsible for all survey activities required.

3.4 Suspension of Work

Contractor may at any time, by written notice to the Subcontractor, suspend the work, or any part thereof, by giving reasonable notice to Subcontractor. The work shall be resumed by Subcontractor on the date fixed in a written notice from Contractor to Subcontractor. If suspension of the work is due to no fault of Subcontractor and not otherwise authorized by other provisions of the Contract Documents, Owner will reimburse Subcontractor for such expense, if any, which is incurred by Subcontractor in connection with the work under this Contract as a result of such suspension which would not have been incurred or reasonably required if there had not been such suspension. There shall be no reimbursement if the period of suspension occurs after expiration of the time allowed for completion of the work, exclusive of any extension of time because of avoidable delays.

3.5 Right of Contractor/Engineer to Terminate Agreement

3.5.1 Engineer, at his sole discretion, shall have the right to terminate the Agreement with Subcontractor after giving five days written notice of termination to Subcontractor in the event of any default by Subcontractor.

3.5.2 It shall be considered a default by Subcontractor whenever he shall:

3.5.2.1 Declare bankruptcy, become insolvent, or assign his assets for the benefit of his creditors.

3.5.2.2 Disregard or violate provisions of the Contract Documents or fail to prosecute the work according to the agreed schedule of completion, including extensions thereof.

3.5.2.3 Fail to provide a qualified superintendent, competent workmen or Subcontractors, or proper materials, or fail to make prompt payment thereof.

3.5.3 In the event of termination of the Agreement by Owner/Engineer/Contractor because of default by Subcontractor, Engineer may take possession of the work and of all materials and equipment thereon and may finish the work by whatever method and means Engineer may select.

3.6 Emergency Protection

3.6.1 In case of an emergency which threatens loss, damage, or injury to persons or property and which requires immediate action to remedy, in the absence of Subcontractor's personnel, then and in that event, Engineer, with or without notice to Subcontractor or his surety, may provide suitable protection to the said property and persons by causing such work to be done and such material to be furnished as shall provide such protection as Engineer may consider necessary and adequate. The cost and expense of such work and material so furnished shall be borne by Subcontractor. If the same shall not be paid on presentation of the bills therefore, then such costs shall be deducted from any amounts due or to become due Subcontractor.

3.6.2 The performance of such emergency work under the direction of Engineer shall in no way relieve Subcontractor from any damages which may occur during or after such precaution has been taken by Engineer.

3.7 Office of Subcontractor at Site

During the performance of this Contract, Subcontractor shall maintain a suitable office at the site of the work as headquarters for the foreman or superintendent authorized to receive drawings, instructions, or other communications, articles, or items from Engineer or its agents. Any such thing given to the said foreman or superintendent or delivered to the office at the site of the work in Subcontractor's absence shall be deemed to have been given to Subcontractor. Subcontractor shall have a telephone installed in this office.

3.8 Attention to Work

Subcontractor shall supervise the work so that it shall be performed faithfully, and Subcontractor shall at all times be represented by a competent superintendent or foreman who shall be present at the work and who shall receive and obey all instructions or orders given under this Contract. The representative shall have full authority to execute the same, and to supply materials, tools, and labor without delay; and shall be the legal representative of Subcontractor. Subcontractor shall be liable for the faithful observance of any instructions delivered to Subcontractor or to Subcontractor's authorized representative.

3.9 Protection of Existing Structures

Unless otherwise indicated on the Drawings or unless otherwise taken care of by Engineer thereof, all utilities and all structures of any nature, whether below or above ground, that may be affected by the work shall be protected and maintained by Subcontractor. Should Subcontractor, disturb, disconnect, or damage any utility or any structure, all expenses of whatever nature arising from such disturbance or the replacement or repair thereof shall be borne by Subcontractor.

3.10 Protection of Subcontractor's Work and Property

3.10.1 Subcontractor shall protect his work, supplies, and materials from damage due to the nature of the work, the action of the elements, trespassers, or any cause whatsoever, until the completion and acceptance of the work.

3.10.2 Neither Owner/Engineer/Contractor nor any of their officers, employees, or agents assumes any responsibility for collecting indemnity from any persons or person causing damage to the work of Subcontractor.

3.11 Surveys

3.11.1 Subcontractor shall develop and make all detail surveys needed for construction, such as slope stakes, batter boards, stakes for pile locations, and other working points, lines, and elevations.

3.12 Location of Utilities

3.12.1 The elevation and location of all utilities shown on the Drawings were taken from public records. It shall be the duty of Subcontractor to make final and exact determination of the location and extent of these utilities, and Subcontractor will be liable for any expense resulting from damage to them.

3.12.2 Any expense incurred by Subcontractor for repair of damage, relocation, or removal of underground on-site piping and utilities not shown on the Drawings or which cannot be reasonably inferred from visible above-ground features will be assumed by Engineer, providing that Subcontractor uses reasonable care in his discovery and repair operations. Subcontractor shall immediately notify Engineer of any facility discovered while performing work required by the Contract and which has not been identified on the Drawings.

3.12.3 Because of the nature of the work, minor adjustments may be required in new construction to meet existing conditions. Adjustments which may be accomplished without expense to Subcontractor shall be made without additional cost to Owner/Engineer.

3.13 Subcontractors' SubSubcontractors

3.13.1 No Subcontractors'subSubcontractor will be recognized as such, and all persons engaged in the work of construction will be considered as employees of Subcontractor. Subcontractor will be held responsible for subSubcontractors' work, which shall be subject to the provisions of the Contract.

3.13.2 SubSubcontractor shall perform not less than 30 percent of the value of all work embodied in this Contract with his own organization and the assistance of workers under Subcontractor's immediate supervision. Furnishing and installing items of major equipment and excavated material disposal will be exempted from this requirement.

3.13.3 Subcontractor shall notify Engineer in writing of the names of all subSubcontractors Subcontractor proposes to employ on the Contract and shall not employ any subSubcontractors until Engineer's approval of such subSubcontractors has been obtained in writing.

3.13.4 Nothing contained in the Contract Documents shall create any contractual relationship between any of Subcontractors' subSubcontractor and Contractor. It shall be further understood that Engineer will have no direct relations with any Subcontractors'subSubcontractor; any such necessary relations between Engineer and Subcontractors'subSubcontractor shall be handled by Subcontractor.

3.13.5 Should any Subcontractors'subSubcontractor fail to perform in a satisfactory manner the work undertaken, such subcontract shall be terminated immediately by Subcontractor upon notice from Engineer.

3.14 Liability of Subcontractor

3.14.1 The mention of any specific duty or liability imposed upon Subcontractor shall not be construed as a limitation or restriction of any general or other liability or duty imposed upon Subcontractor by this Contract, said reference to any specific duty or liability being made merely for the purpose of explanation.

3.14.2 Subcontractor shall be responsible to Engineer for the acts and omissions of all employees and all subSubcontractors, their agents and employees, and all other persons performing any of the Work under an agreement with Subcontractor.

3.15 Assumption of Risks

Until the completion and final acceptance by Engineer of all of the work under or implied by this Contract, the work shall be under Subcontractor's care and charge and Subcontractor shall be responsible for all portions of it, with the exception of those portions already under beneficial use by Owner. Subcontractor shall rebuild, replace,

repair, restore, and make good all injuries, damages, re-erection, and repairs occasioned or rendered necessary by causes of any nature whatsoever, to all or any portions of the work, except as otherwise stipulated.

3.16 Responsibility for Damage

3.16.1 Subcontractor shall assume the defense of, and indemnify and save harmless Owner and each and every officer, employee, and agent thereof, and Engineer, from any and all loss, liability, or damage and from all suits, actions, damages, or claims of every name and description, to which Owner or any of its officers, employees, or agents, or Engineer, may incur or be subjected or put by reason of injury to persons or property in the execution of the work or resulting from negligence or carelessness on the part of Subcontractor, his employees, subSubcontractor, or agents, in the delivery of materials and supplies; or by or on account of any act or omission of Subcontractor, his employees, subSubcontractors, or agents, including, but not limited to, any failure to fulfill the terms of or comply with all laws and regulations which apply to this Contract; and said Engineer shall have the right to estimate the amount of such damage and pay the same, and the amount so paid for such damage shall be deducted from the money due Subcontractor under this Contract, or the whole or so much of the money due or to become due Subcontractor under this Contract, as may be considered necessary by Engineer, shall be retained by Engineer until such suits or claims for damages shall have been settled or otherwise disposed of, and satisfactory evidence to that effect furnished to Engineer.

3.16.2 The rights of Engineer in control of the quality and completeness of the work under this Contract shall not make Subcontractor an agent of Engineer. Subcontractor's liability for all damages to persons or to public or private property, arising from Subcontractor's execution of the work, shall not be lessened because of the existence, exercise, or nonexercise of such rights.

3.17 Acceptance of Subcontractor's Plans

The acceptance by Engineer of any drawing or any method of work proposed by Subcontractor shall not relieve Subcontractor of any responsibility for any errors therein and shall not be regarded as any assumption of risk or liability by Engineer or any officer or employee thereof. Subcontractor shall have no claim under the Contract on account of the failure or partial failure or inefficiency of any plan or method so accepted. Such acceptance shall be considered to mean merely that Engineer has no objection to Subcontractor's using, upon his own full responsibility, the plans or method proposed.

3.18 Suggestions to Subcontractor

Any plan or method of work suggested by Engineer to Subcontractor, but not specified or required, if adapted or followed by Subcontractor in whole or in part, shall be used at the risk and responsibility of Subcontractor, and Engineer and Owner shall assume no responsibility therefore.

3.19 Cooperation with Owner and other Subcontractors

Any difference or conflict which may arise between Subcontractor and other subSubcontractors who may be performing work in behalf of Owner, or between

Subcontractor and workmen of Owner in regard to their work shall be adjusted and determined by Owner. If the work of Subcontractor is delayed because of any acts or omissions of any other Subcontractor of Engineer, Subcontractor shall on that account have no claim against Engineer other than for an extension of time.

3.20 Authority of Engineer

All work done under this Contract shall be done in accordance with the Contract Documents and in a good manner. To prevent disputes and litigation, Engineer shall in all cases determine the amount, quality, acceptability, and fitness of the several kinds of work and materials which are to be paid for under this Contract. Engineer shall decide all questions relative to the true construction, meaning, and intent of the Specifications and the Drawings; shall decide all questions which may arise relative to the classifications and measurements of quantities and materials and the fulfillment of this Contract; and shall have the power to reject work or material which does not conform to the terms of this Contract. Engineer's estimate and decision in all matters shall be a condition precedent to an appeal to Owner, or the right of Subcontractor to receive, demand, or claim any money or other compensation under this Contract and a condition precedent to any liability on the part of Owner to Subcontractor on account of this Contract. Whenever Engineer shall be unable to act, in consequence of absence or any other cause, then such person as Engineer or Owner shall designate shall perform any and all of the duties and be vested with any or all of the powers herein given to Engineer.

3.21 Inspection

Properly authorized and accredited inspectors shall be considered the representatives of Engineer and shall be limited to the duties and power entrusted to them. It will be their duty to inspect materials and workmanship of those portions of the work to which they are assigned, either individually or collectively under instructions of Engineer and to report any and all deviations from the Drawings, Specifications, and other Contract provisions which may come to their notice. Engineer representative shall have the right to order a portion or all of the work to which an Inspector is assigned stopped if, in Engineer's representative's judgment, such action is necessary to allow proper inspection, avoid irreparable damage to the work, or avoid subsequent rejection of work which could not be readily replaced or restored to an acceptable condition. Such stoppage shall be for a period reasonably necessary for Engineer to determine that the work will in fact proceed in due fulfillment of all contract requirements.

3.22 Observation of Completed Work

3.22.1 If any work is covered up without being inspected by Engineer, it must, if required by Engineer in writing, be uncovered for examination and properly restored at Subcontractor's expense.

3.22.2 Re-examination of any work may be directed by Engineer, and if so ordered in writing Subcontractor shall remove or uncover such portions of the completed work as may be directed by Engineer at any time before acceptance of the work. After examination, Subcontractor shall restore the work to the standard required by the Contract Documents. Should the work thus exposed or examined prove acceptable, the uncovering or removing and the restoring of the work shall be paid

for as extra work but, should the work exposed or examined prove unacceptable, the uncovering, removing, and restoring of the work shall be at Subcontractor's expense.

3.23 Value Engineering

The Subcontractor may submit Value Engineering Change Proposals in accordance with FAR 52.248.3.

3.24 Disputes

If any claim, controversy or dispute of any kind or nature whatsoever arises between Engineer and Subcontractor and such dispute cannot be settled through negotiation, then any dispute shall be determined in appropriate legal proceedings, first through non-binding Alternative Dispute Resolution proceedings, if agreed to by the parties, then, if necessary, in a court of law, consistent with 3.25 Governing Law.

3.25 Governing Law

This Subcontract shall be governed by the laws of the State of Illinois, excluding any conflicts of law provisions. Subcontractor shall promptly pay and reimburse Engineer for all costs, expenses, damages, reasonable attorney's fees incurred by Subcontractor which arise out of the performance or non-performance by the Engineer and/or the enforcement of the terms, conditions or obligations of the Subcontract or any bond (if any) furnished in connection therewith.

3.26 Title to Materials Found

Neither Subcontractor, its subSubcontractors nor any of their representatives or employees shall have the right, title or interest in any water, soil, rock, gravel, sand, minerals, timber or any other materials obtained in the excavation or other Work performed under this Subcontract. Any materials found in the performance of Work which are thought to be of archeological or historical value shall be left in place and Engineer shall be notified immediately of the find. No further action shall be taken by Subcontractor until directed by Engineer.

4. MATERIALS, EQUIPMENT, AND WORKMANSHIP

4.1 General Quality of Materials

All materials and equipment shall be new and of a quality equal to that specified.

4.2 Quality in Absence of Detailed Specifications

Whenever under this Contract it is provided that Subcontractor shall furnish materials or manufactured articles or shall do work for which no detailed specifications are set forth, the materials or manufactured articles shall be of the best grade in quality and workmanship obtainable in the market from firms of established good reputation, or, if not ordinarily carried in stock, shall conform to the usual standards for first-class materials or articles of the kind

required, with due consideration, in either situation, of the use to which they are to be put. In general, the work performed shall be in full conformity with the intent to secure the best standard of construction and equipment of the work as a whole or in part.

4.3 Materials and Equipment Specified By Name

Any material or equipment indicated or specified by brand or trade name may also list at *least one additional brand or trade name of comparable quality or utility followed by the* words "or equal", except for those items of material or equipment which may be required by the Specifications to match others in use in an existing facility. Subcontractor may offer any material or equipment which shall be equal in every respect to that specified, but written acceptance of such equipment or material shall be obtained from Engineer. The decision of Engineer shall be final.

4.4 Approval of Materials and Equipment

All materials and equipment offered to be furnished or furnished for the work are subject to inspection and approval or rejection by Engineer. Insofar as practicable, approval shall be obtained prior to purchase and delivery of materials and equipment to the site of the work.

4.5 Removal of Condemned Materials, Structures, and Work

Subcontractor shall remove from the site of the work, without delay, all rejected materials, structures, or work of any kind brought to or incorporated in the work. Upon failure to do so, or upon failure to make satisfactory progress in so doing within two working days after the service of a written notice from Engineer, the rejected material or work may be removed by Engineer and the cost of such removal shall be taken out of the money that may be due or may become due Subcontractor on account of or by virtue of this Contract. No such rejected material shall again be offered for use by Subcontractor under this Contract.

4.6 Sunday, Holiday, and Night Work

No work shall be done between the hours of 6:00 p.m. and 7:00 a.m., Saturdays, Sundays or legal holidays, except such work as is necessary for the proper care and protection of work already performed or except in an emergency and, in any case, only with the permission of Engineer. It is understood, however, that night work may be established as a regular procedure by Subcontractor if he first obtains the written permission of Engineer. Such permission may be revoked at any time by Engineer if Subcontractor fails to maintain at night adequate force and equipment for reasonable prosecution and to justify inspection of the work.

4.7 Records of Employees

Subcontractor and each of its subSubcontractors shall keep an accurate record showing the name, place of residence, occupation, per diem pay, and actual hours worked each day and each calendar week by each person employed in connection with the work. The records shall be available at any time to Engineer or his duly authorized representative.

4.8 Final Guarantee

4.8.1 All work shall be guaranteed by Subcontractor for a period of one year from and after the date of acceptance of the work by Owner/Engineer.

4.8.2 If, within the guarantee period, repairs or changes are required in connection with guaranteed work which, in the opinion of Engineer, is rendered necessary as the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, Subcontractor shall, promptly upon receipt of notice from Owner/Engineer and without expense to Engineer, do the following:

4.8.2.1 Bring to satisfactory condition every particular of all such guaranteed work and correct all defects therein.

4.8.2.2 Make good all damage to the building, site, equipment, or contents thereof which, in the opinion of Engineer, is the result of the use of materials, equipment, or workmanship which are inferior, defective, or not in accordance with the terms of the Contract.

4.8.2.3 Make good any work, material, or equipment and contents of any building, structure, or site disturbed in fulfilling any such guarantee.

4.8.2.4 Submit a work schedule showing the dates of starting and completing the repair work.

4.8.3 If Subcontractor, after notice, fails to proceed to comply with the terms of this guarantee within 10 days, Engineer may have the defects corrected, and Subcontractor and his surety shall be liable for all expense incurred. In case of emergency where, in the opinion of Engineer, delay would cause loss or damage, repairs may be started without notice being given to Subcontractor, and Subcontractor shall pay the cost thereof.

4.8.4 If minor repairs are made by Engineer without notice to Subcontractor, or if Engineer personnel are used to assist Subcontractor or an equipment supplier in making repairs to defective work, Subcontractor will be billed for and shall pay the costs of the minor repairs and the costs associated with the use of Engineer personnel.

4.8.5 If Subcontractor or the manufacturer considers it necessary to make the required repairs at the manufacturer's factory, Subcontractor shall pay the cost of removing, crating, shipping, repairing, and re-installing the equipment.

4.8.6 All special guarantees or warranties applicable to specific parts of the work as may be stipulated in the Specifications or other papers forming a part of this Contract shall be subject to the terms of this paragraph during the first year of the life of each such guarantee. All special guarantees and manufacturers' warranties shall be assembled by Subcontractor and delivered to Engineer, along with a summary list thereof, before the acceptance of the Work.

5. INSURANCE, LEGAL RESPONSIBILITY, AND SAFETY

5.1 Insurance

Subcontractor shall take out, pay for, and maintain throughout the duration of and specifically for this Contract the following insurance coverage:

5.1.1 General Liability and Property Damage Insurance

5.1.1.1 This insurance shall protect Subcontractor from claims for bodily injury and property damage (except automotive equipment) which may arise because of the nature of the work or from operations under this Contract.

5.1.1.2 For Owner and Engineer

This separate policy of insurance shall name Owner, Engineer, their partners, officers, agents, and employees as insured. The original insurance policy shall be submitted for retention by Engineer. This separate policy shall provide coverage to said Owner, Engineer, and their partners, officers, agents, and employees with respect to said work. Both bodily injury and property damage insurance must be on an occurrence basis, and said policy shall provide that the coverage afforded thereby shall be primary coverage to the full limit of liability stated in the declarations. If said Owner, Engineer, and their partners, officers, agents, and employees have other insurance against the loss covered by said policy, that other insurance shall be excess insurance only. No exclusions shall be permitted by endorsement with the exception of preparation or approval of maps and plans, opinions, reports, surveys, designs, or specifications.

5.1.1.3 Amount of Coverage

Each of the above general liability and property damage policies of insurance shall provide coverage in the following minimum limits of liability: $3,000,000 for each occurrence of bodily injury with an aggregate limit of not less than $6,000,000; $1,000,000 for any one occurrence of property damage, with an aggregate limit of not less than $3,000,000.

5.1.1.4 Subcontractors SubSubcontractors

The public liability and property damage insurance shall not be deemed to require Subcontractor to have its subSubcontractors named as co-insured in the policy of public liability and property damage, but the policy shall protect him from contingent liability which may arise from operations of his subSubcontractors. Also, Subcontractor shall secure certificates of insurance as evidence that each of it's subSubcontractor carries insurance to provide coverage under this Contract to the same limits as is required by Subcontractor. Subcontractor shall submit copies of his subSubcontractors insurance certificates to Engineer as evidence of insurance coverage.

5.1.1.5 Included Coverage

The above public liability and property damage insurance shall also include the following coverage:

Premises - Operations - Escalators.

Subcontractor's Protective (subSubcontractors to Subcontractor).

Products - Completed Operations.

Personal Injury (false arrest, libel, wrongful eviction, etc.).

Broad Form Property Damage.

Explosion, Collapse, and Underground Damage (XCU). Exclusions deleted when applicable to operations performed by Subcontractor or his subSubcontractors.

Subcontractor Liability with respect to the hold harmless agreement as stated in Section 5.4.

5.1.1.6 Comprehensive Automobile Liability

This insurance shall cover owned, hired, and other non-owned automobiles and shall protect Subcontractor from claims for bodily injury or property damage which may arise from the use of motor vehicles engaged in various operations under this Contract. The automobile insurance shall provide minimum limits of liability for bodily injury of $500,000 for each person and $1,000,000 each occurrence, and $500,000 of property damage for each occurrence.

5.1.1.7 Umbrella Policy

At the option of Subcontractor, primary limits may be less than required, with an umbrella policy providing the additional limits needed. This form of insurance will be acceptable provided that the primary and umbrella policies both provide the insurance coverage herein required, and further provided that the umbrella policy minimum limits of coverage are $3,000,000 per occurrence and $6,000,000 aggregate. The umbrella coverage shall not apply to Owner's and Engineer's protective policy.

5.1.2 Workmen's Compensation Insurance

Before beginning the work, Subcontractor shall furnish to Engineer satisfactory proof that he has taken out, for the period covered by the work under this Contract, full workmen's compensation insurance for all persons whom he may employ in carrying out the work contemplated under this Contract. If the work of this Contract falls within the jurisdiction of the United States Longshoreman and Harbor Workers Compensation Act and liability falls under Admiralty and Railroad Employees Federal Liability Act, Subcontractor shall extend his

workmen's compensation insurance to provide and maintain in full force and effect insurance coverage under one or both of these Acts for the period covered by this Contract.

5.1.3 Workmen's Occupational Diseases Insurance

Workmen's occupational diseases insurance shall be taken out covering all persons whom Subcontractor may employ in carrying out the work required under this Contract.

5.1.4 Builder's Risk Insurance

5.1.4.1 "All Risk" builder's risk insurance, in an amount equal to the Contract Price, shall cover, but shall not be limited to, fire, lightning, windstorm, hail, explosion, riot, riot attending a strike, civil commotion, smoke damage, damage by aircraft or vehicles, vandalism and malicious mischief, theft, collapse, flood, and earthquake. This insurance shall name Engineer and Subcontractor as insured and shall include coverage, but not by way of limitation, for all damage or loss to the work and to items related to it, to materials and equipment used on the project while same are in transit or stored on or off the project site, to construction plant, and to temporary structures.

5.1.4.2 The builder's risk insurance policy shall provide Engineer the right to occupy the premises without termination of the policy until the final acceptance of the project. Copies of this policy shall be submitted to Engineer.

5.2 Certificate of Insurance

At the time of execution of the Contract, Subcontractor shall file with Engineer a certificate of insurance in the form set forth herein, copies of the policies covering all insurance as required herein, and copies of policies of insurance covering said Owner, Engineer, and their partners, officers, agents, and employees. In those states where use of the pre-printed certificate insurance form is prohibited, Subcontractor shall submit an approved form of certificate of insurance providing the coverage herein required. Each such policy and certificate shall be satisfactory to Engineer and shall be an endorsement precluding cancellation, reduction, or change in coverage without giving Engineer at least 30 days prior notice in writing. Nothing contained in the insurance requirements shall be construed as limiting the extent of Subcontractor's responsibility for payment of damages resulting from his operations under this Contract.

5.3 Notification of Insurance Companies

It is the responsibility of Subcontractor to notify all insurance companies to familiarize themselves with all of the conditions and provisions of this Contract. The insurance companies shall waive their right of notification by Engineer of any change or modification of this Contract, or of decreased or increased work, cancellation of this Contract, or any other acts by Engineer or its authorized employees or agents under the

terms of this Contract. The waiver by the insurance companies shall in no way relieve the insurance companies of their obligations under this Contract.

5.4 Hold Harmless Agreement

Subcontractor shall indemnify and save harmless Owner, Engineer, and all of their partners, officers, agents, and employees from suits, actions, or claims of any character, particularly but not limited to those brought on account of injury, death, or damage received by any person, persons, or property resulting from the acts or omissions of Subcontractor or any of his subSubcontractors directly in support of the work specifically directed under this Contract.

5.5 Patents

5.5.1 Except as otherwise provided in these Control Documents, Subcontractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the work. Subcontractor agrees to indemnify and save harmless Owner, Engineer, and their duly authorized representatives or employees from all suits at law, or actions of every nature for, or on account of the use of, any patented materials, equipment, devices, or processes.

5.5.2 Should Subcontractor, its agents, servants, or employees, or any of them, be enjoined from furnishing or using any invention, article, material, or appliance supplied or required to be supplied or used under this Contract, Subcontractor shall promptly offer other articles, materials, or appliances in lieu thereof, of equal efficiency, quality, finish, suitability, and market value, for review by Engineer. If Engineer should disapprove the offered substitutes and should elect, in lieu of a substitution, to have supplied, and to retain and use, any such invention, article, material, or appliance as may by this Contract be required to be supplied, Subcontractor shall pay such royalties and secure such valid licenses as may be requisite and necessary for Engineer and officers, agents, and employees, or any of them, to use such invention, article, material, or appliance without being disturbed or in any way interfered with by any proceeding in law or equity on account thereof. Should Subcontractor neglect or refuse to make any approved substitution promptly, or to pay such royalties and secure such licenses as may be necessary, Engineer shall have the right to make such substitution, or Owner may pay such royalties and secure such licenses and charge the cost thereof against any money due Subcontractor from Owner, or recover the amount thereof from him and his sureties notwithstanding that final payment under this Contract may have been made.

5.5.3 Except as otherwise provided in these Contract Documents, Subcontractor shall pay all such royalties or other monies required to be paid.

5.6 Laws To Be Observed

Subcontractor shall keep himself fully informed of all existing and future federal, state, county, and municipal laws, ordinances, and regulations which in any manner affect those engaged or employed in the work or the materials used in the work or conduct of the Work

or the rights, duties, powers, or obligations of Engineer or of Subcontractor or which otherwise affect the Contract, and of all orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. Subcontractor shall at all times observe and comply with, and shall cause all Subcontractor agents, it's subSubcontractors, and employees to observe and comply with, all such laws, ordinances, regulations, orders, and decrees, and shall protect and indemnify Owner, its officers, agents, employees, and Engineer against any claim, loss, or liability arising or resulting from or based upon the violation of any such law, grievance, regulation, order, or decree, whether by himself or by his agents, it's subSubcontractors, or employees.

5.7 Provisions of Law/Permits

It is specifically provided that this Contract is subject to all the provisions of law/permits regulating and controlling the performance of work for Engineer, and that the rules of law shall prevail over any provision contained in any of the Contract Documents which may be in conflict thereto or inconsistent therewith. Each and every provision of law and clause required by law to be inserted in these Contract Documents shall be deemed to be inserted herein and the Contract Documents shall be read and enforced as though it were included herein. If through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon application of either party, the Contract Documents shall be physically amended to make the needed insertions or corrections.

5.8 Deliveries to Subcontractor

Engineer or any of its agents or representatives may deliver to Subcontractor any drawings, samples, notices, letters, communications, or other items by way of personal delivery to Subcontractor, personal delivery to Subcontractor's foreman or superintendent at the site of the work, or delivery to Subcontractor's business address specified in the bid or specified in a written notice of changed address. Delivery to Subcontractor's above mentioned business address or to Subcontractor's office at the site of the work may be made either by personal delivery to such address or office or by sending the item to be delivered by way of the United States mail, postage prepaid.

5.9 Assignment of Contract

This Contract may not be assigned in whole or in part except upon the written consent of Engineer. Any assignment agreement shall be subject to review and approval by Engineer.

5.10 Protection of Persons and Property

5.10.1 Subcontractor will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. Subcontractor shall furnish such security guards, fences, warning signs, lights, and walkways, and shall take all other precautions as shall be necessary to prevent damage to persons or property. All structures and improvements in the vicinity of the work shall be protected by Subcontractor, and if such property is damaged, injured, or destroyed by Subcontractor, his employees,

subSubcontractors, or agents, it shall be restored to a condition as good as when he entered upon the work at Subcontractor's expense.

5.10.2 The duty of Engineer to conduct construction inspection of Subcontractor's performance does not include any review of the adequacy of Subcontractor's safety measures in, on, or near the construction site or sites. Engineer has not been retained or compensated to provide design and construction review services relating to Subcontractor's safety precautions or to means, methods, techniques, sequences, or procedures required for Subcontractor to perform work.

5.11 Safety

5.11.1 The Subcontractor shall be solely and completely responsible for conditions of the job site, including safety of all employees and property during performance of the work. This requirement shall apply continuously and shall not be limited to normal working hours. Safety provisions shall conform to U.S. Department of Labor Occupational Safety and Health Act and any equivalent state laws, local ordinances, codes, and regulations. Where any of the laws, ordinances, codes, and regulations are in conflict, the most stringent requirements shall be followed. Subcontractor's failure to thoroughly familiarize itself with the aforementioned safety provisions shall not relieve it from compliance with obligations and penalties set forth therein.

5.11.2 Subcontractor understands and agrees that the nature of the work to be performed under these Contract Documents is potentially hazardous. In performance of work covered by these Contract Documents, the Subcontractor shall, as minimum, satisfy all federal, state, and local statutes, regulations, and ordinances regarding health and safety, including medical record retention requirements.

5.11.3 For the duration of this contract, Subcontractor shall develop and maintain a safety program which will effectively incorporate and implement all required safety provisions, including, but not limited to, provisions of the Site Safety Plan. Subcontractor shall appoint a representative who is qualified and authorized to supervise and enforce compliance with the safety program and who shall be on site at all times when work is in progress.

5.11.4 Engineer shall not be responsible for review or approval of the adequacy of the Subcontractor's safety program, safety supervisor, or any safety measures taken in, on, or near the construction site.

5.11.5 As part of its safety program, the Subcontractor shall provide at a designated place on the job site safety equipment needed for the work, as prescribed by the aforementioned authorities, and all articles necessary for giving first aid to the injured. Subcontractor shall establish the procedures for the immediate removal and transportation of injured persons to a hospital or a doctor.

5.11.6 Subcontractor shall file with Engineer three copies of employer's first report of injury or illness immediately following an incident requiring the filing of said report during the prosecution of the work under this Contract. Subcontractor shall also furnish to Engineer three copies of the employer's first report of injury or

illness involving any of it's subSubcontractor on this project. If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to Engineer.

5.12 Medical and Training Certification

If project involves contact with hazardous wastes, Subcontractor agrees to submit to Engineer a certification for each employee assigned to hazardous waste site field work that said employee has been medically certified by a physician for this type of work, including the use of respirator in accordance with the provisions of 29 CFR 1910.134 and that said employee has been properly trained for work on hazardous waste sites. All Subcontractor's personnel engaged in field work must be trained for such activity. Training shall include, but not be limited to, use of personal protection equipment including respirators, decontamination, hazard recognition, safe operating procedures, and emergency response. Certification of employee medical status and training must be submitted to Engineer before an employee shall be permitted to enter a hazardous waste site under this contract.

5.13 Liability Of Owner's Representatives and Officials

No official or employee of Owner, nor Engineer, nor any authorized assistant or agent of any of them, shall be personally responsible for any liability arising from this Contract. Engineer shall not be responsible for construction means, methods, techniques, sequences and procedures, time of performance, or for safety precautions and programs in connection with construction work. Engineer shall not be responsible for Subcontractor's failure to carry out the work in accordance with the construction Contract. Engineer shall not be responsible for acts or omissions of Subcontractor, any subSubcontractors, or any of their agents or employees, or any other persons performing any of the work.

6. PROGRESS AND COMPLETION OF WORK

6.1 Commencement of Contract Time; Notice to Proceed

The Contract Time will commence to run on the day indicated in the Notice to Proceed; but in no event shall the Contract Time commence to run later than the thirtieth day after the effective date of the Agreement. A Notice to Proceed may be given at any time within thirty days after the effective date of the Agreement.

6.2 Notice of Starting Work

Subcontractor shall notify Engineer in writing of his intention to start work at the site and shall provide 48 hours notice. In case of a temporary suspension of work he shall give reasonable notice before resuming work.

6.3 Time of Completion

Subcontractor shall promptly begin the work and prosecute the same until the work under this Contract shall be completed and ready for full use within the time specified in the Agreement.

6.4 Equipment and Methods

The work under this Contract shall be prosecuted with all materials, tools, machinery, apparatus, and labor, and by such methods as are necessary to the complete execution of everything described, shown, or reasonably implied in the Contract Documents. If at any time before or during the progress of the work, any part of Subcontractor's plant or equipment or any of his methods of execution of the work appear to Engineer to be inefficient or inadequate to insure the required quality or rate of progress of the work, Engineer may order Subcontractor to increase or improve his facilities or methods and Subcontractor shall comply promptly with such orders. Neither compliance with such orders nor failure of Engineer to issue such orders shall relieve Subcontractor from his obligation to secure the quality of the work and the rate of progress required. Subcontractor alone shall be responsible for the safety, adequacy, and efficiency of his equipment and methods.

6.5 Unfavorable Weather and Other Conditions

Subcontractor shall pursue only such portions of the work as shall not be damaged during unfavorable weather and other unfavorable conditions. No portions of the work whose satisfactory quality or efficiency will be affected by an unfavorable condition shall be constructed while these unfavorable conditions exist unless, by special means or precautions, Subcontractor shall be able to overcome them.

6.6 Alterations, Deletions, and Extra Work

6.6.1 Engineer reserves the right to increase or decrease the quantity of any item or portion of the work, or to omit portions of the work, as may be deemed necessary or advisable by Engineer and, also, to make such alterations or deviations, additions to, or deletions from the work or the Drawings and Specifications as may be determined during the progress of the work to be necessary and advisable for the proper completion thereof. Upon written order of Engineer, Subcontractor shall proceed with the work as increased, decreased, or altered. Such work shall be considered a part of and subject to all terms and requirements of the Contract Documents.

6.6.2 Engineer is authorized to order, on behalf of Owner, minor changes in the work which do not involve extra cost to Owner and which do not change the character of the work.

6.6.3 No claim of Subcontractor for extra compensation because of any change, alteration, deletion, addition, or extra work will be paid or be payable unless a written order for such change, alteration, deletion, addition, or extra work is signed by the authorized representative of Engineer. All adjustments, if any, in the Contract Price to be paid to Subcontractor because of any such change, alteration, deletion, addition, or extra work shall be made only to the extent and in the manner provided under the paragraph "Payment For Extra Work and Work Deleted," Section 7.3 in these General Terms and Conditions. Such alterations shall in no way affect, vitiate, or make void this Contract or any part thereof,

except that which is necessarily affected by such alterations and is clearly the evident intention of the parties to this Contract.

6.6.4 In case of neglect or refusal by Subcontractor to perform any extra work which may be authorized by Owner/Engineer or to make satisfactory progress in its execution, Engineer may employ any person or persons to perform such work and Subcontractor shall not in any way interfere with or molest the person or persons so employed.

6.6.5 When any changes decrease the amount of work to be done, Subcontractor shall not be entitled to any compensation or damages. Such changes shall not constitute a basis or reason for any claim by Subcontractor for extra compensation or damages on account of any anticipated profits which he thereby loses on the omitted work.

6.7 Delays

6.7.1 Avoidable Delays

Avoidable delays in the prosecution or completion of the work shall include all delays which might have been avoided by the exercise of care, prudence, foresight, or diligence on the part of Subcontractor. Avoidable delays include delays in the prosecution of parts of the work which may in themselves be unavoidable but do not necessarily prevent or delay the prosecution of other parts of the work nor the completion of the whole work within the time herein specified; reasonable loss of time resulting from the necessity of submitting drawings to Engineer for approval and from the making of surveys, measurements, and inspections; and such interruptions as may occur in the prosecution of the work on account of the reasonable interference of other Subcontractors employed by Engineer, which do not necessarily prevent the completion of the whole work within the time herein specified.

6.7.2 Unavoidable Delays

Unavoidable delays in the prosecution or completion of the work under this Contract shall include all delays which may result through causes beyond the control of Subcontractor and which Subcontractor could not have provided against by the exercise of care, prudence, foresight, or diligence. So far as they necessarily interfere with Subcontractor's completion of the work, the following will be considered unavoidable delays: orders issued by Engineer changing the amount of work to be done, the quantity of material to be furnished, or the manner in which the work is to be prosecuted; failure of Owner to provide rights-of-way; and unforeseen delays in the completion of the work of other Subcontractors under contract with Owner. Delays due to adverse weather conditions will not be regarded as unavoidable delays as Subcontractor should understand that such conditions are to be expected and should plan work accordingly.

6.7.3 Notice of Delays

6.7.3.1 Whenever Subcontractor foresees any delay in the prosecution of the work or immediately upon the occurrence of any delay, Subcontractor shall notify Engineer in writing of the probability of the occurrence of such delay and its cause in order that Engineer may determine whether the delay is to be considered avoidable or unavoidable, how long it may continue, and to what extent the prosecution and completion of the work are to be delayed by it.

6.7.3.2 After the completion of any part of the whole of the work, Engineer, in approving the amount due Subcontractor, will assume that any and all delays which have occurred in its prosecution and completion have been avoidable delays, except such delays as shall have been called to the attention of Engineer at the time of their occurrence and later found by him to have been unavoidable. Subcontractor shall make no claims that any delay not called to the attention of Engineer at the time of its occurrence has been an unavoidable delay.

6.8 Extension of Time

6.8.1 For Unavoidable Delays

For delays which are unavoidable, as determined by Engineer, Subcontractor will be allowed, if he applies for the same, an extension of time beyond the time specified for completion, proportionate to such unavoidable delay or delays, within which to complete the Contract, and Subcontractor will not be charged, because of any extension of time for such unavoidable delay, any liquidated damages or engineering and inspection costs as are charged in the case of extensions of time for avoidable delays.

6.8.2 For Avoidable Delay

6.8.2.1 If the work called for under this Contract is not finished and completed by Subcontractor, in all parts and in accordance with all requirements, within the time specified for completion elsewhere in these Contract Documents, including extensions of time granted because of unavoidable delay; or if at any time prior to the expiration of said time it should appear to Engineer that Subcontractor will be unable to finish and complete said work within said time; and if Subcontractor's failure or inability to finish and complete said work as aforesaid within said time should be due, as determined by Engineer, to avoidable delay or delays, then in that event Engineer, if it finds such to be for the best interest of Engineer, may, but will not be required to, grant to Subcontractor an extension or extensions of time within which to finish and complete all said work.

6.8.2.2 If such an extension of time is granted, Subcontractor will be charged liquidated damages as provided for in these General Terms and Conditions.

6.8.2.3 In addition, if the time limit be so extended, Engineer shall charge to Subcontractor and may deduct from the final payment for the work all engineering and inspection expenses incurred by Engineer in connection with the work during the period of such extension or extensions. The cost of final surveys and preparation of final estimates will not be included in such charges. Such expenses of Engineer shall be computed on the basis of the hourly schedule of charges set forth in these General Terms and Conditions.

6.8.3 Effect of Extension of Time

The granting of any extension of time on account of delays which in the judgment of Engineer are avoidable delays shall in no way operate as a waiver on the part of Owner/Engineer of its rights under this Contract.

6.9 Proof of Compliance with Contract

In order that Engineer may determine whether Subcontractor has complied with those requirements of this Contract, where compliance is not readily ascertainable through inspection and tests of the work and materials, Subcontractor shall, at any time requested, submit to Engineer properly authenticated documents or other satisfactory evidence as proof of his compliance with such requirements.

7. PAYMENTS TO SUBSUBCONTRACTOR

7.1 Progress Estimates and Payments

7.1.1 Subcontractor shall, on the 15th day of each calendar month, together with a representative of Engineer, make an estimate of the value of the work performed in accordance with this Contract since the last preceding Application for Payment was made. Following agreement by the Engineer, the Subcontractor shall then prepare and submit a request for 50% of the Application for Payment value on the Periodic Estimate for Partial Payment Forms to both Tetra Tech and Sullivan. Copies of the form are bound with these Contract Documents. Payment forms will be supplied by Engineer. The number of copies to be submitted will be determined by Engineer after construction has started. Subcontractor shall receive payment from Tetra Tech and Sullivan within 60 days after submitting approved payment application.

7.1.2 Upon presentation of certified copies of purchase bills and freight bills, Engineer will permit Subcontractor to include in such monthly estimates payment for materials that will eventually be incorporated in the project, providing that such material is suitably stored at the site at the time of submission of the estimate for payment. At the time the next following monthly estimate is submitted, Subcontractor shall submit certified copies of receipted purchase and freight bills for the stored materials included in the monthly payment estimate submitted the

month before. If Subcontractor fails to submit proof of payment with the monthly payment estimate, those items of stored materials for which no proof of payment has been submitted will be deleted from the current payment estimate. Such materials when so paid for by Engineer will become the property of Owner and, in case of default on the part of Subcontractor, Owner may use or cause to be used by others these materials in construction of the project. However, Subcontractor shall be responsible for safeguarding such materials against loss or damage of any nature whatsoever, and in case of any loss or damage Subcontractor shall replace such lost or damaged materials at no additional cost.

7.1.3 Except as otherwise provided in the immediately preceding paragraph, the first estimate shall be of the value of the work done and of materials proposed and suitable for permanent incorporation in the work, delivered and suitably and safely stored at the site of the Work since Subcontractor shall have begun the performance of this Contract. Every subsequent estimate, except the final estimate, shall be of the value of the work done and materials delivered and suitably stored at the site of the work since the last preceding estimate.

7.1.4 No estimate shall be required to be made when, in the judgment of Engineer, the total value of the work done and materials incorporated into the work under this Contract since the last preceding estimate amount to less than $5,000.

7.1.5 The estimates shall be signed by Engineer, and after such approval, Owner, subject to the foregoing provisions, will pay or cause to be paid an amount equal to the estimated value of the work performed less a retained amount in accordance with the following schedule:

7.1.5.1 Ten percent until construction is 50 percent complete.

7.1.5.2 After construction is 50 percent complete the retained amount will remain unchanged until all work has been completed, provided that Subcontractor is making satisfactory progress and there is no specific cause for greater withholding.

7.1.5.3 When the project is substantially complete for operational or beneficial use as determined by Engineer, the retained amount will be only that necessary to assure completion of the Contract Work.

7.2 Payment for Extra Work and Work Deleted

Whenever corrections, additions, or modifications in the work under this Contract change the amount of work to be done or the amount of compensation due Subcontractor, except as provided for unit price items, Engineer will prepare a Change Order setting forth the extra work to be performed or work to be omitted. Such a Change Order will also set forth the method of computing the added or reduced compensation to be due Subcontractor. The method of computing the added or reduced compensation will be determined under one or more of the following methods as selected by Engineer.

7.2.1 By an acceptable lump sum price proposal by Subcontractor.

7.2.2 By force-account.

7.3 Force-Account Payment

7.3.1 When work is to be paid for on a force-account basis, Subcontractor will be paid the costs for labor, materials, and equipment, plus a markup of 20 percent to the cost of labor, 15 percent to the cost of materials, and 15 percent to the equipment rental. These markups shall constitute full compensation for overhead and profit.

7.3.2 It is understood that labor, materials, and equipment may be furnished by Subcontractor, by its subSubcontractor, or by others on behalf of Subcontractor. When the work is performed by forces other than Subcontractor's organization, Subcontractor shall reach agreement with such other forces as to the distribution of the payment made by Engineer for such work, and Engineer will make no additional payment.

7.3.3 The costs for labor, materials, and equipment will be determined as provided in the following paragraphs:

7.3.4 Labor

7.3.4.1 Whether the employer is Subcontractor, its subSubcontractor, or other forces, the actual wages used in performing the work will be the amount paid to workmen, foremen, and superintendents devoting their exclusive attention to the work in question. The actual wages shall include payments to, or on behalf of, workmen for health and welfare, pension, vacation, and similar purposes.

7.3.4.2 Fifteen percent will be added to the actual wages and shall constitute full compensation for all payments imposed by state and federal laws for workmen's compensation, public liability, and property damage insurance, and all other payments made to, or on behalf of, the workmen other than actual wages.

7.3.5 Materials

7.3.5.1 Only materials incorporated in the work will be paid for, the cost of which will be the cost to the purchaser, whether Subcontractor, subSubcontractor, or other forces, from the supplier thereof. If Subcontractor does not furnish satisfactory evidence of the cost of such materials from the actual supplier thereof, or if the cost of such materials is excessive, in the opinion of Engineer, then the cost of such materials shall be deemed to be the lowest current wholesale price at which such materials are available in the quantities concerned delivered to the job site, less any discounts.

7.3.5.2 Engineer reserves the right to furnish such materials as it deems advisable, and Subcontractor shall have no claims for costs and profit on such materials.

7.3.6 Equipment

7.3.6.1 Subcontractor will be paid for the rental rates of equipment as provided in the following paragraphs. Rates shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. Operators of rented equipment will be paid for as provided under "Labor," Section 7.4.4.

7.3.6.2 Unless otherwise specified, manufacturers' ratings shall be used to classify equipment for the determination of applicable rental rates.

7.3.6.3 For the use of any equipment normally required for the Contract, regardless of whether the equipment is already on the work or is to be delivered to the work, and regardless of ownership and any rental or other agreement entered into by Subcontractor for the use of such equipment, Subcontractor will be paid as provided herein at the current local rental rates used by established distributors or equipment rental agencies.

7.3.6.4 Individual pieces of equipment not listed and having a replacement value of $50 or less shall be considered to be tools or small equipment, and no payment will be made for their use on the work.

7.3.6.5 In computing the hourly rental of equipment, less than 30 minutes shall be considered one half hour, except that the minimum rental time to be paid per day shall be one hour. Rental time will not be allowed while equipment is inoperative due to breakdowns or nonworking days.

7.3.6.6 The rental time of equipment to be paid for shall be the time the equipment is in operation on the force-account work being performed and, in addition, shall include the time required to move the equipment to the site of such force-account work and return it to its original location or to another location requiring no more time than that required to return it to its original location, except that moving time will not be paid for if the equipment is used at the site of the force-account work on other than the force-account work. Loading and transporting costs will be allowed when the equipment is moved by means other than its own power. No payment will be made if the equipment is used at the site of the force-account work on other than the force-account work. For the use of equipment not required under the Contract and moved on the site and used exclusively for force-account work, Subcontractor will be paid as provided above, except that the rental period shall begin at the time the equipment is unloaded at the site of the force-account work and shall terminate at

the end of the day on which the order to discontinue the force-account work is given to Subcontractor by Engineer. The minimum total rental time to be paid for the equipment moved on site shall be eight hours.

7.3.7 Reporting and Invoicing

All force-account work shall be reported daily and signed by Subcontractor and Engineer; these daily reports shall thereafter be considered the true record of force- account work done. Completely detailed invoices covering the force-account work shall be submitted for payment not later than 15 days after the completion of the work. The charges for work performed by Subcontractor, by a subSubcontractor, and by an employee of a subSubcontractor shall be reported separately. Invoices substantiating charges from suppliers, vendors, and subSubcontractors shall be included with Subcontractor's invoices. Subcontractor shall permit examination of accounts, bills, and vouchers relating to the force-account work when requested by Engineer.

7.4 Engineer's Right to Withhold Certain Amounts

7.4.1 Engineer may withhold from payment to Subcontractor, in addition to the retained percentage, such an amount or amounts as may be necessary to cover:

7.4.1.1 Payments that may be earned or due for just claims for labor or materials furnished in and about the work.

7.4.1.2 Defective work not remedied.

7.4.1.3 Failure of Subcontractor to make proper payments to its subSubcontractor.

7.4.1.4 Reasonable doubt that this Contract can be completed for the balance then unpaid.

7.4.1.5 Damage to another Subcontractor, where there is evidence thereof.

7.4.1.6 Excess cost of field engineering, inspection, and other expenses.

7.4.2 Owner/Engineer will disburse and shall have the right to act as agent for Subcontractor in disbursing such funds as have been withheld pursuant to this paragraph to the party or parties who are entitled to payment wherefrom. Engineer will render to Subcontractor a proper accounting of all such funds disbursed on behalf of Subcontractor.

7.4.3 Owner/Engineer also reserves the right, even after full completion and acceptance of the work, to refuse payment of the final amount due Subcontractor until it is satisfied that all its subSubcontractors, material suppliers, and employees of Subcontractor have been paid in full.

7.5 Payment for Uncorrected Work

If any portion of the work done or material furnished under this Contract proves defective and not in accordance with the Contract Documents, and if the imperfection in the same is not of sufficient magnitude or importance to make the work dangerous or wholly undesirable, or if the removal of such work is impracticable or will create conditions which are dangerous or undesirable, Engineer shall have the right and authority to retain such work instead of requiring the imperfect work to be removed and reconstructed. Engineer shall determine deductions in the payments due or to become due Subcontractor as may be just and reasonable, and Engineer may make such deductions in the payments due or to become due Subcontractor as are just and reasonable for imperfect work.

7.6 Payment for Work by Engineer Following Termination of the Contract

Upon termination of the Contract in accordance with "Right of Engineer to Terminate Agreement," no further payments shall be due Subcontractor until the work is completed. If the unpaid balance of the Contract Amount shall exceed the cost of completing the work, including all overhead costs, the excess shall be paid to Subcontractor. If the cost of completing the work shall exceed the unpaid balance, Subcontractor shall pay the difference to Engineer. The cost incurred by Engineer, as herein provided, and the damage incurred through Subcontractor's default, shall be certified by Engineer.

7.7 Acceptance

Any part of the work may be accepted in writing by Owner/Engineer when it shall have been completed in accordance with the terms of the Contract Documents as determined by Engineer. When the work is substantially completed, Subcontractor shall notify Engineer, in writing, that the work will be ready for final inspections and tests on a date stated in such notice. The notice shall be given at least 10 days in advance of said date and shall be forwarded to Engineer. Owner/Engineer shall cause an inspection to be made in order to determine whether the work has been completed in accordance with the terms of the Contract Documents.

7.8 Final Estimate and Payment

7.8.1 As soon as practicable after the final acceptance of the work by Owner/Engineer under this Contract, Subcontractor shall make a final estimate of the amount of work done thereunder and the value thereof. Such final estimate shall be checked, approved, and signed by Engineer. After such approval, Engineer shall pay or cause to be paid to Subcontractor, in the manner provided by law, the entire sum so found to be due hereunder, after deducting therefrom all previous payments and such other amounts as the terms of this Contract prescribe.

7.8.2 Neither the final payment nor any part of the retained percentage shall become due until Subcontractor shall deliver to Owner/Engineer a complete release of claims or liens arising out of this Contract or receipts in full in lieu thereof. If required Subcontractor shall provide an affidavit that so far as he has knowledge or information the release and receipts include all the labor and materials for which a lien or claim could be filed. Subcontractor may, if its subSubcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to

Owner/Engineer to indemnify Owner/Engineer against any claim or lien (in cases where such payment is not already guaranteed by surety bond). If any claim or lien remains unsatisfied after all payments are made, Subcontractor shall refund to Owner/Engineer all moneys that the latter may be compelled to pay in discharging such a lien, including all costs and a reasonable attorney's fee.

7.8.3 In the event Engineer does not receive final billing within 60 days of substantial completion, Engineer shall have no obligation to honor such invoices. In the event there is a dispute on any portion of the invoice, the Engineer may reject the entire invoice or pay only that portion of the invoice not in dispute.

End of Section 00 72 00

Section 00 73 46
DAVIS-BACON PREVAILING WAGE DETERMINATION (SOURCE: U.S. DEPARTMENT OF LABOR)

Lake County Prevailing Wage for September 2011

Trade Name	RG	TYP	C	Base	FRMAN	*M-F>8	OSA	OSH	H/W	Pensn	Vac	Trng
ASBESTOS ABT-GEN		ALL		35.200	35.700	1.5	1.5	2.0	12.18	8.820	0.000	0.450
ASBESTOS ABT-MEC		BLD		32.290	0.000	1.5	1.5	2.0	10.82	10.66	0.000	0.620
BOILERMAKER		BLD		43.020	46.890	2.0	2.0	2.0	6.720	9.890	0.000	0.350
BRICK MASON		BLD		39.780	43.760	1.5	1.5	2.0	9.300	11.17	0.000	0.730
CARPENTER		ALL		40.770	42.770	1.5	1.5	2.0	12.34	11.25	0.000	0.530
CEMENT MASON		ALL		40.300	42.300	2.0	1.5	2.0	10.25	12.78	0.000	0.250
CERAMIC TILE FNSHER		BLD		33.600	0.000	2.0	1.5	2.0	9.200	6.680	0.000	0.580
COMMUNICATION TECH		BLD		34.650	36.750	1.5	1.5	2.0	10.05	11.09	1.390	0.520
ELECTRIC PWR EQMT OP		ALL		34.240	45.510	1.5	1.5	2.0	5.000	10.62	0.000	0.260
ELECTRIC PWR GRNDMAN		ALL		26.480	45.510	1.5	1.5	2.0	5.000	8.200	0.000	0.200
ELECTRIC PWR LINEMAN		ALL		41.000	45.510	1.5	1.5	2.0	5.000	12.71	0.000	0.310
ELECTRIC PWR TRK DRV		ALL		27.420	45.510	1.5	1.5	2.0	5.000	8.500	0.000	0.210
ELECTRICIAN		BLD		39.150	43.070	1.5	1.5	2.0	11.75	13.74	1.570	0.630
ELEVATOR CONSTRUCTOR		BLD		47.410	53.340	2.0	2.0	2.0	10.53	10.71	2.840	0.000
FENCE ERECTOR		ALL		32.660	34.660	1.5	1.5	2.0	10.67	10.00	0.000	0.500
GLAZIER		BLD		38.000	39.500	1.5	2.0	2.0	10.19	13.64	0.000	0.790
HT/FROST INSULATOR		BLD		43.050	45.550	1.5	1.5	2.0	10.82	11.86	0.000	0.620
IRON WORKER		ALL		40.750	42.750	2.0	2.0	2.0	13.20	19.09	0.000	0.350
LABORER		ALL		35.200	35.950	1.5	1.5	2.0	12.18	8.820	0.000	0.450
LATHER		ALL		40.770	42.770	1.5	1.5	2.0	12.34	11.25	0.000	0.530
MACHINIST		BLD		43.160	45.160	1.5	1.5	2.0	7.980	8.950	0.000	0.000
MARBLE FINISHERS		ALL		29.100	0.000	1.5	1.5	2.0	8.800	10.67	0.000	0.740
MARBLE MASON		BLD		39.030	42.930	1.5	1.5	2.0	8.800	10.67	0.000	0.740
MATERIAL TESTER I		ALL		25.200	0.000	1.5	1.5	2.0	12.18	8.820	0.000	0.450
MATERIALS TESTER II		ALL		30.200	0.000	1.5	1.5	2.0	12.18	8.820	0.000	0.450
MILLWRIGHT		ALL		40.770	42.770	1.5	1.5	2.0	12.34	11.25	0.000	0.530
OPERATING ENGINEER		BLD	1	45.100	49.100	2.0	2.0	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		BLD	2	43.800	49.100	2.0	2.0	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		BLD	3	41.250	49.100	2.0	2.0	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		BLD	4	39.500	49.100	2.0	2.0	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		BLD	5	48.850	49.100	2.0	2.0	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		BLD	6	46.100	49.100	2.0	2.0	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		BLD	7	48.100	49.100	2.0	2.0	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		FLT	1	51.300	51.300	1.5	1.5	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		FLT	2	49.800	51.300	1.5	1.5	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		FLT	3	44.350	51.300	1.5	1.5	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		FLT	4	36.850	51.300	1.5	1.5	2.0	11.70	8.050	1.900	1.150
OPERATING ENGINEER		HWY	1	43.300	47.300	1.5	1.5	2.0	14.40	9.550	1.900	1.250
OPERATING ENGINEER		HWY	2	42.750	47.300	1.5	1.5	2.0	14.40	9.550	1.900	1.250
OPERATING ENGINEER		HWY	3	40.700	47.300	1.5	1.5	2.0	14.40	9.550	1.900	1.250
OPERATING ENGINEER		HWY	4	39.300	47.300	1.5	1.5	2.0	14.40	9.550	1.900	1.250
OPERATING ENGINEER		HWY	5	38.100	47.300	1.5	1.5	2.0	14.40	9.550	1.900	1.250
OPERATING ENGINEER		HWY	6	46.300	47.300	1.5	1.5	2.0	14.40	9.550	1.900	1.250
OPERATING ENGINEER		HWY	7	44.300	47.300	1.5	1.5	2.0	14.40	9.550	1.900	1.250
ORNAMNTL IRON WORKER		ALL		40.200	42.450	2.0	2.0	2.0	12.67	14.81	0.000	0.500
PAINTER		ALL		38.000	42.750	1.5	1.5	1.5	9.750	11.10	0.000	0.770
PAINTER SIGNS		BLD		32.770	36.800	1.5	1.5	1.5	2.600	2.620	0.000	0.000
PILEDRIVER		ALL		40.770	42.770	1.5	1.5	2.0	12.34	11.25	0.000	0.530
PIPEFITTER		BLD		44.050	47.050	1.5	1.5	2.0	8.460	13.85	0.000	1.820
PLASTERER		BLD		38.690	41.010	2.0	1.5	2.0	8.900	11.08	0.000	0.150
PLUMBER		BLD		44.500	47.500	1.5	1.5	2.0	11.05	12.40	0.000	1.700
ROOFER		BLD		37.650	40.650	1.5	1.5	2.0	7.750	6.570	0.000	0.430
SHEETMETAL WORKER		BLD		40.460	43.700	1.5	1.5	2.0	9.830	16.25	0.000	0.630
SIGN HANGER		BLD		28.960	29.810	1.5	1.5	2.0	4.700	2.880	0.000	0.000

SPRINKLER FITTER	BLD		49.200	51.200	1.5	1.5	2.0	9.250	8.050	0.000	0.450
STEEL ERECTOR	ALL		40.750	42.750	2.0	2.0	2.0	10.95	15.99	0.000	0.300
STONE MASON	BLD		39.780	43.760	1.5	1.5	2.0	9.300	11.17	0.000	0.730
TERRAZZO FINISHER	BLD		35.150	0.000	1.5	1.5	2.0	9.200	9.070	0.000	0.430
TERRAZZO MASON	BLD		39.010	42.010	1.5	1.5	2.0	9.200	10.41	0.000	0.510
TILE MASON	BLD		40.490	44.490	2.0	1.5	2.0	9.200	8.390	0.000	0.640
TRAFFIC SAFETY WRKR	HWY		28.250	29.850	1.5	1.5	2.0	4.896	4.175	0.000	0.000
TRUCK DRIVER	ALL	1	32.200	32.750	1.5	1.5	2.0	5.700	5.500	0.000	0.150
TRUCK DRIVER	ALL	2	32.350	32.750	1.5	1.5	2.0	5.700	5.500	0.000	0.150
TRUCK DRIVER	ALL	3	32.550	32.750	1.5	1.5	2.0	5.700	5.500	0.000	0.150
TRUCK DRIVER	ALL	4	32.750	32.750	1.5	1.5	2.0	5.700	5.500	0.000	0.150
TUCKPOINTER	BLD		39.200	40.200	1.5	1.5	2.0	7.830	10.25	0.000	0.770

Legend:

M-F>8 (Overtime is required for any hour greater than 8 worked each day, Monday through Friday.
OSA (Overtime is required for every hour worked on Saturday)
OSH (Overtime is required for every hour worked on Sunday and Holidays)
H/W (Health & Welfare Insurance)
Pensn (Pension)
Vac (Vacation)
Trng (Training)

Explanations

LAKE COUNTY

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day and Veterans Day in some classifications/counties. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration. If in doubt, please check with IDOL.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and

other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATION TECHNICIAN

Low voltage construction, installation, maintenance and removal of telecommunication facilities (voice, sound, data and video) including outside plant, telephone, security systems and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area network), LAN (local area networks), and ISDN (integrated system digital network), pulling of wire in raceways, but not the installation of raceways.

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all material that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installation of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and exteriors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and exterior which are installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials;

field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

OPERATING ENGINEER - BUILDING

Class 1. Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson Attachment; Batch Plant; Benoto (requires Two Engineers); Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Conveyor (Truck Mounted); Concrete Paver Over 27E cu. ft; Concrete Paver 27E cu. ft. and Under: Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, One, Two and Three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Lubrication Technician; Manipulators; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes: Squeeze Cretes-Screw Type Pumps; Gypsum Bulker and Pump; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-Form Paver; Straddle Buggies; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Rock Drill (Self-Propelled); Rock Drill (Truck Mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators; Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Low Boys; Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches; Bobcats (up to and including ¾ cu yd.) .

Class 4. Bobcats and/or other Skid Steer Loaders (other than bobcats up to and including ¾ cu yd.); Oilers; and Brick Forklift.

Class 5. Assistant Craft Foreman.

Class 6. Gradall

Class 7. Mechanics

OPERATING ENGINEERS - HIGHWAY CONSTRUCTION

Class 1. Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines: ABG Paver; Backhoes with Caisson Attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Tower Cranes of all types: Creter Crane: Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dowell Machine with Air Compressor; Dredges; Formless Curb and Gutter Machine; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Truck Mounted; Hoists, One, Two and Three Drum; Hydraulic Backhoes; Backhoes with shear attachments; Lubrication Technician; Manipulators; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Rock/Track Tamper; Roto Mill Grinder; Slip-Form Paver; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Trenching Machine; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole Drills (Tunnel Shaft); Underground Boring and/or Mining Machines 5 ft. in diameter and over tunnel, etc; Underground Boring and/or Mining Machines under 5 ft. in diameter; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (Less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; All Locomotives, Dinky; Off-Road Hauling Units (including articulating)/2 ton capacity or more; Non Self-Loading Ejection Dump; Pump Cretes: Squeeze Cretes - Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc., self-propelled; Scoops - Tractor Drawn; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper; Scraper - Prime Mover in Tandem (Regardless of Size): Tank Car Heater; Tractors, Push, Pulling Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Fireman on Boilers; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than Asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper-Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic

Power Unit (Pile Driving, Extracting, or Drilling); Hydro- Blaster; Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Tractaire; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 5. Bobcats (all); Brick Forklifts; Oilers.

Class 6. Field Mechanics and Field Welders

Class 7. Gradall and machines of like nature.

OPERATING ENGINEER - FLOATING

Class 1. Craft Foreman; Diver/Wet Tender; and Engineer (hydraulic dredge).

Class 2. Crane/Backhoe Operator; 70 Ton or over Tug Operator; Mechanic/Welder; Assistant Engineer (Hydraulic Dredge); Leverman (Hydraulic Dredge); Diver Tender; Friction and Lattice Boom Cranes.

Class 3. Deck Equipment Operator, Machineryman; Maintenance of Crane (over 50 ton capacity); Tug/Launch Operator; Loader/Dozer and like equipment on Barge; and Deck Machinery, etc.

Class 4. Deck Equipment Operator, Machineryman/Fireman (4 Equipment Units or More); Off Road Trucks (2 ton capacity or more); Deck Hand, Tug Engineer, Crane Maintenance 50 Ton Capacity and Under or Backhoe Weighing 115,000 pounds or less; and Assistant Tug Operator.

TRAFFIC SAFETY - work associated with barricades, horses and drums used to reduce lane usage on highway work, the installation and removal of temporary lane markings, and the installation and removal of temporary road signs.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION
Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole

and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 217-782-1710 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

DIVISION 01
GENERAL REQUIREMENTS

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SECTION 01 11 00

SUMMARY OF WORK

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1.1.3 Construction sequence

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1.1.5 Existing facilities

1.1.6 Work on OMC and other private property

1.1.7 Abbreviations

1.2 WORK COVERED BY CONTRACT DOCUMENTS

The work area is at the OMC Plant 2 Superfund Site at 90 East Seahorse Drive, Waukegan, Illinois. The work to be performed is shown on the drawings. In general the project will include (1) installation of the silt fence and storm water protection, (2) soil excavation and transportation for landfill disposal, (3) dredge sediment from waterway and transportation for landfill disposal, (4) sediment capping with a geotextile fabric and rock armored surface, (5) concrete removal, (6) concrete crushing and placement on site, (7) extension of containment cell with TSCA-compliant landfill cover, (8) dune restoration, and (9) site restoration.

1.3 SUBCONTRACTOR'S DUTIES

1.3.1 Except as specifically noted, provide and pay for

1.3.1.1 Labor, materials, and equipment
Excavation, water diversion, dewatering, material processing, wastewater treatment, dewatered sediment transportation and disposal
Soil removal, transportation and disposal
Geotextile and other required materials for sediment capping
Concrete removal, on-site crushing and placement on-site
TSCA-compliant landfill cap extension
Dune restoration
Tools, construction equipment, and machinery
Waste characterization samples, shipping costs, and tests

1.3.1.2 Necessary utilities, such as water, gas, electrical power, telephones, roads, fences, and sanitary facilities, including maintenance thereof

1.3.1.3 Subcontractor office and other facilities and services necessary for proper execution and completion of the Work

1.3.2 Perform all the work described in these contract documents except where specifically indicated to be done by others.

1.3.3 Pay legally required sales, consumer, and use taxes.

1.3.4 Secure and pay for legally required permits, licenses, and government fees.

1.3.5 Give required notices.

1.3.6 Employ workmen and foremen with sufficient knowledge, skill, and experience to perform the work assigned to them.

1.3.7 Comply with the codes, laws, ordinances, rules, regulations, orders, and other legal requirements of public authorities bearing on the conduct of the work.

1.3.8 Submit written notice to Engineer of observed variance of Contract Documents from legal requirements. Any necessary changes will be adjusted as provided in the Contract for changes in the Work.

1.3.9 Enforce discipline and good order among Subcontractor and subSubcontractor employees. Any person employed by Subcontractor or subSubcontractors who does not perform his work in a skillful manner, is incompetent, or acts in a disorderly or intemperate manner shall, at the written request of Engineer, be removed from the project immediately and shall not be employed again in any portion of the Work without the approval of Engineer.

1.3.10 Provide at all times facilities for access and inspection of the Work by representatives of Owner and of official governmental agencies designated by Owner as having the right to inspect the work.

1.3.11 Contact J.U.L.I.E., Inc. at 1-800-892-0123 prior to starting any underground activities.

1.4 CONSTRUCTION SEQUENCE

1.4.1 Subcontractor shall submit a work sequence so that the entire project can be properly coordinated.

1.4.2 Subcontractor shall arrange with the Engineer a sequence of procedures, means of access, space for storage of materials and equipment, and use of approaches prior to work startup.

1.4.3 The work sequence to be submitted shall include details on how the following operations will be performed.

1.4.3.1 Site preparation, silt control fence repair and installation

1.4.3.2 Installation and relocation of coffer dams or equivalent.

1.4.3.3 Management area for sediment bulking.

1.4.3.4 Sediment excavation, handling, and dewatering procedures.

1.4.3.5 Impacted water processing and management.

1.4.3.6 Storm water processing conveyance systems.

1.4.3.7 Processed solids transportation and disposal.

1.4.3.8 Installation of sediment capping materials.

1.4.3.9 Soil excavation, transportation and disposal.

1.4.3.10 Concrete removal, on-site crushing, and placement on-site.

1.4.3.11 Installation of TSCA-compliant cap and cover materials.

1.4.3.12 Dune restoration.

1.4.3.13 Removal of construction materials and debris from the site.

1.4.3.14 Restoration of surfaces and seeding

1.5 SUBCONTRACTOR'S USE OF PREMISES AND OTHER PRIVATE PROPERTY

1.5.1 Confine operations at site to areas permitted by access agreements, law, ordinances, permits, and the contract documents.

1.5.2 Do not load or permit any part of a structure to be subjected to any force that will endanger its safety.

1.5.3 Assume responsibility for protection and safekeeping of products stored on site.

1.5.4 Do not discharge smoke, dust, or other contaminants into the atmosphere, or fluids or materials into any waterway as will violate regulations of any legally constituted authority.

1.5.5 Move stored products which interfere with the operations of other subcontractors.

1.5.6 Obtain and pay for additional storage or work areas needed for operations.

1.5.7 Do not turn on any hydrants unless permission is obtained. If potable water is desired, make arrangements with the water utility and pay for water at the established rate.

1.6 EXISTING FACILITIES

1.6.1 The existing North Shore Sanitary District water discharge facilities and Peoples Gas Natural Gas Pipeline shall remain in continuous operation during the construction period.

1.6.2 Plan and conduct construction operations to avoid disturbing existing structures, piping, equipment, and services in any manner which will interrupt or impair operations, except as approved by Engineer.

1.7 WORK ON OMC AND OTHER PRIVATE PROPERTY

1.7.1 Subcontractor shall comply with supplemental conditions, if applicable, prior to starting any work on private property.

1.7.2 Subcontractor shall notify the City of Waukegan and other private property owners not less than 72 hours prior to starting any work on this property.

1.7.3 Subcontractor shall submit a work sequence and layout for review and approval by Engineer, before starting any work.

1.7.4 Restoration shall commence as soon as the construction is completed.

1.7.5 Subcontractor shall maintain OMC and other property owner access to the property at all times without any exceptions, except where it would be in violation of the approved Construction Health and Safety Plan.

1.7.6 All work on private property shall be limited to the areas approved. Any damage done by the Subcontractor beyond its limit shall be corrected and restored at the Subcontractor's expense.

1.7.7 When all restoration is completed, Engineer will request a "sign off" from the City of Waukegan and other private property owners.

1.8 ABBREVIATIONS

The following abbreviations as used in the Contract Documents have the listed meanings:

1.8.1 Standards Organizations

AA.....	Aluminum Association
AASHTO....	American Association of State Highway and Transportation Officials
ACI.....	American Concrete Institute
ADC.....	Air Diffusion Council
AGA.....	American Gas Association
AGMA.....	American Gear Manufacturers Association

AISC.....	American Institute of Steel Construction
ANSI	American National Standards Institute
ARI.....	Air Conditioning and Refrigeration Institute
ASHRAE....	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASME.....	American Society of Mechanical Engineers
ASTM.....	American Society for Testing and Materials
AWS.....	American Welding Society
AWWA	American Water Works Association
CRSI.....	Concrete Reinforcing Steel Institute
FIA	Factory Insurance Association
FM.....	Factory Mutual
FS	Federal Specifications
GRI.....	Geosynthetic Research Institute
IEEE.....	Institute of Electrical and Electronic Engineers
MS.....	Military Specifications
NBBPVI.....	National Board of Boiler and Pressure Vessel Inspectors
NBS.....	National Bureau of Standards
NEC.....	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA.....	National Fire Protection Association
OSHA.....	Occupational Safety and Health Administration
TSCA.....	Toxic Substances Control Act
UL	Underwriters Laboratory

1.8.2 Units of Weight and Measure

A.....	ampere
btu.....	British thermal unit
C	degrees Celsius
cc	cubic centimeter
cf.....	cubic foot
cfm.....	cubic feet per minute
cfs.....	cubic feet per second
cy.....	cubic yard
dB.....	decibel

F	degrees Fahrenheit
fpm	feet per minute
fps	feet per second
ft	feet
g	gram
ga	gauge
gal.	gallon
gpm	gallons per minute
hp	horsepower
h	hour
Hz	hertz
in.	inches
kV	kilovolts
kVA	kilovolt-amperes
kW	kilowatts
kWh	kilowatt hours
L	liter
lb	pound
lbs	pounds
mA	milliamperes
mg/L	milligrams per liter
mgd	million gallons per day
mL	milliliter
mm	millimeter
mph	miles per hour
MVA	megavolt-ampere
ppb	parts per billion
ppm	parts per million
psf	pounds per square foot
psi	pounds per square inch gauge
rpm	revolutions per minute
scfm	standard cubic feet per minute
sf	square feet
sy	square yard
V	volt
VA	volt-ampere

1.8.3 Other Abbreviations

AC	alternating current
AHU	air handling unit
Bil	basic impulse insulation level
BOD	biochemical oxygen demand
Co	company
conc	concrete
Corp	corporation
cu	cubic
DC	direct current
dpdt	double pole, double throw
H-O-A	hand-off-automatic
Inc	Incorporated
LPG	liquid petroleum gas
max	maximum
min	minimum
N.C.	normally closed
N.O.	normally open
No.	number
pvc	polyvinyl chloride
Rms	root mean square
RTRP	reinforced thermosetting resin pipe
scr	silicon controlled rectifier
SDR	standard dimension ratio
spdt	single pole, double throw
sq	square
std	square transmission coefficient
U.S.	United States

2. **PRODUCTS** - (NOT USED)

3. **EXECUTION** - (NOT USED)

End of Section 01 11 00

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APPLICATION FOR PAYMENT

SECTION 01 20 00

APPLICATION FOR PAYMENT

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1.2.1 Agreement

1.2.2 General Conditions

1.2.3 Section 01 33 00 - Submittals - submittal procedures

1.2.4 Section 01 70 00 - Project Closeout - final payment

1.3 FORMAT

1.3.1 Use the Monthly Estimate for Partial Payment form included in this document.

1.4 PREPARATION OF APPLICATIONS

1.4.1 Include a transmittal letter with each application for payment.

1.4.2 Present the required information in typewritten form or on electronic media printout for approval by the Engineer.

1.4.3 Payment items shall conform to those provided in Section 00 41 00 Bid Form.

1.4.4 Quantify the amount of work performed for which payment is sought. The quantities shall be presented in the units provided in Section 00 41 00 Bid Form. Attach documentation for measurement of quantities. Stated quantities shall have been measured using methods stipulated in Sections covering that work.

1.4.5 Include an updated construction schedule with each payment request.

1.4.6 Execute certification by signature of authorized officer.

1.4.7 Provide dollar value in each column for each line item for portion of work performed.

1.4.8 List each authorized change order as an extension on continuation sheet, listing change order number and dollar amount as for an original item of work.

1.4.9 For final payment, in addition to the requirements above, indicate previous payments and sum remaining due. Include all waivers along with final application for payment.

1.5 SUBMITTALS

Submit the following in compliance with Section 01 33 00 Submittals:

1.5.1 Three copies of Application for Payment. Submit at intervals stipulated in the contract.

1.6 SUBSTANTIATING DATA

1.6.1 Provide copies of trucking hauling tickets and landfill weigh tickets, as required, to the Engineer to substantiate costs.

1.6.2 When required by Engineer, submit other substantiating information, data to justify dollar amounts in question.

1.6.3 Provide one copy of data with cover letter for each copy of submittal. Indicate application number and date, and line item by number and description.

2. PRODUCTS - (NOT USED)

3. EXECUTION - (NOT USED)

End of Section 01 20 00

_____ **OWNER**

MONTHLY ESTIMATE FOR PARTIAL PAYMENT NO. CONTRACT NO.

PROJECT: SULTRAC PROJECT NO.

FOR THE PERIOD: TO , INCLUSIVE

SUBCONTRACTOR'S NAME AND ADDRESS;

CONTRACT PRICE (LUMP SUM), $ ESTIMATED COST (UNIT PRICE): $

ITEM NO. (1)	DESCRIPTION OF ITEM (2)	SUBCONTRACTOR'S SCHEDULE OF VALUES			WORK COMPLETED TO DATE		
		UNIT PRICE (3)	QUANTITY (4)	AMOUNT (5)	QUANTITY (6)	AMOUNT EARNED TO DATE (7)	% COMPLETE (8)

_____ **OWNER**

MONTHLY ESTIMATE FOR PARTIAL PAYMENT NO. CONTRACT NO.

PROJECT: SULTRAC PROJECT NO.

FOR THE PERIOD: TO , INCLUSIVE

SUBCONTRACTOR'S NAME AND ADDRESS;

CONTRACT PRICE (LUMP SUM), $ ESTIMATED COST (UNIT PRICE): $

ITEM NO. (1)	DESCRIPTION OF ITEM (2)	SUBCONTRACTOR'S SCHEDULE OF VALUES			WORK COMPLETED TO DATE		
		UNIT PRICE (3)	QUANTITY (4)	AMOUNT (5)	QUANTITY (6)	AMOUNT EARNED TO DATE (7)	% COMPLETE (8)
TOTAL (ORIGINAL CONTRACT)				$		$	
	CHANGE ORDER NO. 1						
	CHANGE ORDER NO. 2						
	Materials Stored On-Site (For detailed breakdown, see attached supplements)						
	TOTALS			$		$	

*SUPPLEMENT TO MONTHLY ESTIMATE FORM

PROJECT AND LOCATION PARTIAL PAYMENT NO.	CONTRACT NO. SUBCONTRACTOR	SULTRAC PROJECT NO.	
DETAIL OF MATERIALS STORED ON SITE			
DESCRIPTION OF ITEM	NO. OF UNITS	COST PER UNIT	AMOUNT
TOTAL			$

* NOTE: This form must be filled out and securely attached to the Monthly Estimate Form whenever credit is taken for materials stored on site. Submit copies of certified invoices and proof of payment for all materials stored on site and claimed on this form.

CERTIFICATE OF SUBCONTRACTOR OR HIS DULY AUTHORIZED REPRESENTATIVE

To the best of my knowledge and belief, I certify that all items, units, quantities, and prices of work and material shown on the face of Sheet(s) of this Estimate are correct and that all work has been performed and materials supplied in full accordance with the terms and conditions of the corresponding construction contract documents between the undersigned as Subcontractor and _____as Owner, dated,_____ and all authorized changes thereto; that the following is a true and correct statement of the contract account up to and including the last day of the period covered by this estimate and that no part of the Total Amount Due has been received:

(a) Total amount earned (col. 7)
(b) Retained percentage (10%) up to 50% of Contract
(c) Total earned less retained percentage
(d) Total previously certified [Line (c) from previous estimate No. ----]
(e) Total Amount Due This Estimate
(f) Total billed to Sullivan International Group, Inc.
(g) Total billed to Tetra Tech EM Inc.

I further certify that all claims outstanding as of this date against the undersigned as Subcontractor for labor, materials, and expendable equipment employed in the performance of said contract up to this date have been paid in full in accordance with the requirements of said contract.

SUBCONTRACTOR: _____ Date: _____

By: _____ Title: _____

CERTIFICATE OF OWNER'S CONSULTING ENGINEER

I certify that I have verified this Monthly Estimate, and that to the best of my knowledge and belief it is a true and correct statement of work performed and materials supplied under the Contract, and that the Subcontractor's certified statement of his account and the amount due him is correct and just, and that all work and material included in this Estimate have been performed in full accordance with the terms and conditions of this corresponding construction contract documents and authorized changes thereto.

SulTRAC

By: Resident Engineer

Date:

Payment of the above amount due this estimate is approved.

SulTRAC

By:

Title:

Date:

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PROJECT MANAGEMENT AND COORDINATION

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

1. GENERAL

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1.1.3 Cutting and Patching

1.1.4 Preconstruction Conference

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1.2 RELATED SECTIONS

1.2.1 Section 01 11 00 - Summary of Work

1.2.2 Section 01 33 00 - Submittals

1.2.3 Section 01 70 00 - Project Closeout

1.3 COORDINATION

1.3.1 Coordinate scheduling, submittals, and work of the various sections of specifications to ensure efficient and orderly sequence of installation of interdependent construction elements.

1.3.2 After inspection of work, coordinate access to site for correction of defective work and work not in accordance with contract documents, to minimize disruption of property owner's activities.

1.4 FIELD ENGINEERING

1.4.1 Employ a Land Surveyor registered in the State of Illinois and acceptable to the Engineer.

1.4.2 Subcontractor shall locate and protect survey control and reference points.

1.4.3 Control datum for survey is that shown on drawings.

1.4.4 Provide drawings and certification signed by the land surveyor that the elevations and locations of the excavations are in conformance with the contract documents

1.4.5 Submit three copies of registered site drawing and certificate signed by the land surveyor that the elevations and locations of the work are in conformance with the contract documents.

1.5 CUTTING AND PATCHING

1.5.1 Employ skilled and experienced installer to perform cutting and patching.

1.5.2 Submit written request in advance of cutting or altering elements which affects:

1.5.2.1 Structural integrity of element

1.5.2.2 Efficiency, maintenance, or safety of element

1.5.2.3 Visual qualities of sight-exposed elements

1.5.2.4 Work of owner or separate subcontractor

1.5.3 Identify any hazardous substance or condition exposed during the work to the engineer for decision or remedy.

1.6 PRECONSTRUCTION CONFERENCE

1.6.1 Engineer will schedule a conference after notice of award.

1.6.2 Attendance required: owner, engineer, and subcontractor.

1.6.3 Agenda

1.6.3.1 Review of Contract Agreement.

1.6.3.2 Submission of executed bonds and insurance certificates.

1.6.3.3 Distribution of contract documents.

1.6.3.4 Submission of list of subcontractors, list of products, schedule of values, and progress schedule.

1.6.3.5 Designation of personnel representing the parties in contract, owner, and the engineer.

1.6.3.6 Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal requests, change orders, and contract closeout procedures.

1.6.3.7 Scheduling and meetings

1.7 PROGRESS MEETINGS

1.7.1 Schedule and administer meetings throughout progress of the work at maximum weekly intervals.

1.7.2 Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies within two days to engineer, owner, participants, and those affected by decisions made.

1.7.3 Attendance required: Subcontractor superintendent, major subcontractors, engineer, as appropriate to agenda topics for each meeting.

1.7.4 Agenda.

1.7.4.1 Review minutes of previous meetings.
1.7.4.2 Review of work progress.
1.7.4.3 Field observations, problems, and decisions.
1.7.4.4 Identification of problems which impede planned progress.
1.7.4.5 Review of submittals, schedule and status of submittals.
1.7.4.6 Review of off-site fabrication and delivery schedules.
1.7.4.7 Maintenance of progress schedule.
1.7.4.8 Corrective measures to regain projected schedules.
1.7.4.9 Planned progress during succeeding work period.
1.7.4.10 Coordination of projected progress.
1.7.4.11 Maintenance of quality and work standards.
1.7.4.12 Effect of proposed changes on progress schedule and coordination.
1.7.4.13 Other business relating to work.

1.8 ON-SITE MEETINGS

1.8.1 Maintain at job site, one copy each of the following:

1.8.1.1 Contract drawings
1.8.1.2 Specifications
1.8.1.3 Addenda
1.8.1.4 Reviewed submittals
1.8.1.5 List of outstanding submittals
1.8.1.6 Change orders
1.8.1.7 Other modifications to Contract
1.8.1.8 Field test reports
1.8.1.9 Copy of approved work schedule
1.8.1.10 Health and Safety Plan and other safety-related documents
1.8.1.11 Manufacturers' installation and application instructions
1.8.1.12 Labor conditions and wage schedules
1.8.1.13 Other documents as specified

2. PRODUCTS - (NOT USED)

3. EXECUTION - (NOT USED)

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SECTION 01 32 00
CONSTRUCTION PROGRESS DOCUMENTATION

SECTION 01 32 00

CONSTRUCTION PROGRESS DOCUMENTATION

1. GENERAL

1.1 REFERENCES

Not used.

1.2 DEFINITIONS

Not used.

1.3 SUBMITTALS

The following shall be submitted in accordance with Section 01 33 00 Submittals:

1.3.1 Construction Schedule

Prior to start of work, within 14 days of notice to proceed, submit a Construction Schedule as described in this section. Allow sufficient time for cycles of review, comment and resubmission so that the final version is delivered to the Engineer before start of construction activities.

1.3.2 Daily Reports

The Subcontractor will prepare daily reports on construction progress. These reports should include qualitative descriptions of work performed and include quantities to the extent practicable.

1.3.3 Weekly Reports

The Subcontractor will provide weekly reports on construction progress. These reports should include qualitative descriptions of work performed and provide forward guidance on upcoming scheduled activities; also include weekly summaries of quantities to the extent practicable.

1.4 CONSTRUCTION SCHEDULE SUBMITTAL PROCEDURES

Submit all network analysis and updates in hard copy and on electronic media that is acceptable to the Engineer. The project schedule will also be posted in the format specified as an Adobe PDF file. For hard copy submittals, a condensed critical path method schedule is preferred but another practicable form of presentation will be acceptable as approved by the Engineer.

1.5 SCHEDULING

The Subcontractor shall use the critical path method (CPM) to schedule and control construction activities. Schedules shall include start and stop dates, durations for tasks and subtasks.

The scheduling software that will be utilized on this project is MS Project or similar.

1.5.1 Construction Schedule

Prepare a detailed schedule in graphic form (Gantt Chart) showing proposed dates of starting and completing each major division of the Work. Develop the Project Schedule to an appropriate level of detail. Failure to develop the Project Schedule to an appropriate level of detail, as determined by the Engineer, will result in its disapproval. Subdivide tasks so that less than 2 percent of all non-procurement activities have Original Durations (OD) greater than 20 work days or 30 calendar days.

The schedule shall identify as a minimum:
- Subcontractor mobilization to site
- Critical submittals (including submission and approval dates)
- Site set up including installation of temporary facilities and controls
- Installation and operation of the dewatering and treatment system
- Procurement of long lead-time products (such as sheet pile) and equipment
- Installation and removal of ditch coffer dam or equivalent
- Dredging
- Capping of sediment
- Extension of TSCA cap on East Containment Cell
- Soil excavation, transportation, and disposal
- Dune excavation, transportation, and disposal
- Concrete removal, on-site crushing, and on-site placement
- Waste disposal
- Dune restoration
- Site restoration and cleanup
- Demobilization

1.5.2 Construction Progress Schedule

The network analysis system shall be kept current, with changes made to reflect the actual progress and status of the construction. Update the construction schedule at monthly intervals or when the schedule has been revised. Reflect any changes occurring since the last update. The schedule should show the progress of work compared to the original project schedule. Application for progress payments will not be processed until the progress schedule is delivered to Engineer.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

End of Section 01 32 00

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SUBMITTALS

SECTION 01 33 00

SUBMITTALS

1. GENERAL

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1.1.2 Construction Progress Schedule

1.1.3 Proposed Product List

1.1.4 Shop Drawings

1.1.5 Product Data

1.1.6 Breakdown of Contract Amount

1.1.7 Health and Safety Requirements

1.1.8 As-Constructed Drawings

1.2 RELATED SECTIONS

1.2.1 Section 01 45 00 - Quality Control

1.2.2 Section 01 70 00 - Project Closeout

1.3 SUBMITTAL PROCEDURES

1.3.1 Transmit each submittal with an engineer accepted form.

1.3.2 Sequentially number the transmittal forms. Resubmittals shall have original number with an alphabetic suffix.

1.3.3 Identify Project, Subcontractor, subSubcontractor, or Supplier; pertinent Drawing sheet and detail numbers, and Specification Section number.

1.3.4 Apply Subcontractor's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.

1.3.5 Schedule submittals to expedite the project, and deliver to Engineer at business address. Coordinate submission of related items.

1.3.6 Identify variations, deviations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed work.

1.3.7 Provide adequate space for Subcontractor and Engineer review stamps, if required.

1.3.8 Revise and resubmit submittals as required, identify all changes made since previous submittal.

1.3.9 Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with the provisions of the contract documents.

1.4 CONSTRUCTION PROGRESS SCHEDULE

1.4.1 Submit three copies of the initial construction progress schedule within 14 days after date of Notice to Proceed.

1.4.2 Prepare a detailed progress schedule in graphic form showing proposed dates of starting and completing each major division of the Work.

1.4.3 The schedule shall be consistent with the time and order of work requirements of the Specifications, and shall be the basis of Subcontractor's operations.

1.4.4 The schedule shall be prepared utilizing the critical path method.

1.4.4.1 Level of Detail Required

Develop the Project Schedule to an appropriate level of detail. Failure to develop the Project Schedule to an appropriate level of detail, as determined by the Engineer, will result in its disapproval. The Engineer will consider, but is not limited to, the following characteristics and requirements to determine appropriate level of detail:

1.4.4.2 Activity Durations

Reasonable activity durations are those that allow the progress of ongoing activities to be accurately determined between update periods. Less than 2 percent of all non-procurement activities shall have Original Durations (OD) greater than 20 work days or 30 calendar days. Procurement activities are defined herein.

1.4.4.3 Procurement Activities

The schedule must include activities associated with the submittal, approval, procurement, fabrication, and delivery of long lead materials, equipment, *fabricated assemblies and supplies. Long lead procurement activities are those* with an anticipated procurement sequence of over 90 calendar days. A typical

procurement sequence includes the string of activities: submit, approve, procure, fabricate, and deliver.

1.4.5 A condensed critical path method schedule is preferred but another practicable form of presentation will be acceptable.

1.4.6 At the end of each month, Subcontractor shall submit a revised schedule showing the current status of the Work as compared to the projected status. The current application for a progress payment will not be processed until the revised schedule is delivered to Engineer.

1.5 PROPOSED PRODUCT LIST

1.5.1 Within 10 days after execution of the Contract, submit to Engineer a complete list of products and equipment which are intended to be furnished.

1.6 SHOP DRAWINGS

1.6.1 Shop drawings are original drawings prepared by Subcontractor, subcontractors, suppliers, or distributors, illustrating some portion of the work and showing fabrication, layout, setting, or erection details of equipment, materials, and components.

1.6.2 Unless otherwise instructed, Subcontractor shall submit to Engineer for review and approval three prints of each plan or two prints and one reproducible. Engineer will return with review comments on one print or one reproducible.

1.6.3 Shop drawings shall be 8-1/2 x 11 or 8-1/2 x 14 inch or standard size, or as directed by Engineer. Drawings shall be clearly identified as to location of the equipment, materials, and apparatus in the Work. Submittals shall show the name, address, and telephone number of the company that prepared them.

1.6.4 Fold drawings to an approximate size of 8-1/2 x 11 inch in such a manner that the title block will be located in the lower right hand corner of the exposed surface. Roll, do not fold, reproducible copies of drawings.

1.6.5 Shop Drawings Showing Deviations from Contract Drawings

1.6.5.1 Submit detailed drawings of modifications to or deviations from the contract drawings, as required to accommodate equipment, facilities, or processes included in the awarded Contract.

1.6.5.2 Submittal procedures shall be the same as for shop drawings.

1.6.6 Subcontractor Responsibilities

1.6.6.1 Review and approve shop drawings, project data, and samples before submitting them.

1.6.6.2 Verify field measurements, field construction criteria, catalog numbers, and similar data.

1.6.6.3 Coordinate each submittal with the requirements of the Contract Documents.

1.6.6.4 For each major equipment item, submit all shop drawings in one complete package to permit checking complete installation details.

1.6.6.5 In a clear space above the title block of the shop drawings, or on the back, hand stamp the following, and enter the required information:

EPA
OMC Plant 2 Superfund Site – Supplemental Remedial Action
Date ....
Project No.
Identification ....
Contract Drawing No. ...
Specification Section .....

This document has been checked for accuracy of content and for compliance with the Contract Documents and is hereby approved. The information contained herein has been coordinated with all involved Subcontractors.

Subcontractor _____

Signed. _____

1.6.6.6 Subcontractor's responsibility for errors, omissions, and deviations from requirements of the Contract Documents in submittals is not relieved by Engineer's review.

1.6.6.7 At time of submittal, notify Engineer in writing of deviations in submittals from requirements of the Contract Documents.

1.6.6.8 Do not install materials or equipment which require submittals until the submittals are returned with Engineer's stamp and initials or signature indicating approval.

1.6.6.9 Revise returned shop drawings as required and resubmit until final approval is obtained. Indicate on the drawings any changes which have been made other than those requested by Engineer.

1.6.6.10 Submit new project data and samples when the initial submittal is returned disapproved.

1.6.6.11 No claim will be allowed for damages or extension of time because of delays in the work resulting from rejection of material or from revision and resubmittal of shop drawings, project data, or samples.

1.6.7 Engineer's Duties

1.6.7.1 Engineer will review submittals for compliance with the Contract Documents and with the design concept of the project within 14 days of receipt of submittals.

1.6.7.2 Review of a separate item does not constitute acceptance of an assembly in which the item functions.

1.6.7.3 Engineer will affix a stamp to the returned copy of each submittal. The stamp will be marked to indicate whether the submittal is "Approved," "Approved as Noted," "Revise and Resubmit," "Not Approved," or "Information" and an explanation will be given if the submittal is unsatisfactory. The stamp will be initialed or signed certifying the submittal review.

1.7 PRODUCT DATA

1.7.1 Submit the number of copies which Subcontractor requires, plus two copies which will be retained by the Engineer.

1.7.2 Product data are standard schematic drawings, catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data. Product data shall be submitted on all materials with a purchase price of $1000 or more.

1.7.3 Mark each copy of printed material to identify applicable products, models, options, and other data..

1.7.4 Project data shall show the name, mailing address, and telephone number of the manufacturer and supplier.

1.8 BREAKDOWN OF CONTRACT AMOUNT

1.8.1 Submit a typewritten breakdown of contract amount on for use in computing and checking periodic payment estimates.

1.8.2 No payment will be made until the breakdown has been submitted and accepted by Engineer.

1.8.3 The breakdown may be as detailed as desired for partial payment application.

1.9 HEALTH AND SAFETY REQUIREMENTS

1.9.1 Prepare a Construction Health and Safety Plan. Submit three copies to Engineer and Owner for review in accordance with Section 01 35 00 no later than 10 days after Notice to Proceed and prior to the start of any field work.

1.10 AS-CONSTRUCTED DRAWINGS

1.10.1 Provide to Engineer at closeout, one set of as- constructed record documents; including all revision, modifications, additions, and changes to the Work as required in Section 01 70 00 Project Closeout.

2. PRODUCTS/MATERIALS (NOT USED)

3. EXECUTION (NOT USED)

End of Section 01 33 00

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SECTION 01 35 30
HEALTH AND SAFETY REQUIREMENTS

SECTION 01 35 30

HEALTH AND SAFETY REQUIREMENTS

1. GENERAL

1.1 SUBMITTALS

Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES within 10 days of Notice to Proceed:

1.1.1 Submit three copies of the site-specific Construction Health and Safety Plan (HASP).

1.1.2 Submit three copies of the site Health and Safety Officer's qualification and certificates.

1.1.3 Submit three copies of current OSHA training certificates for all site personnel.

1.1.4 Submit three copies of medical monitoring reports for all site personnel.

1.1.5 Submit three copies of the Subcontractor's corporate health and safety program.

1.2 DESCRIPTION OF WORK

This section requires the Subcontractor to implement practices and procedures for working safely and in compliance with OSHA regulations while performing work under this contract.

1.3 REGULATORY REQUIREMENTS

Comply with OSHA requirements in 29 CFR 1910 and 29 CFR 1926 with work performed under this contract and state specific OSHA requirements where applicable. Submit to the Engineer for resolution matters of interpretation of standards before starting work. The most stringent requirements apply where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary.

1.4 HEALTH AND SAFETY

This section outlines the health and safety requirements to be followed by Subcontractor during the performance of the work.

1.4.1 Address all occupational safety and health hazards (traditional construction as well as contaminant-related hazards associated with cleanup operations.

1.4.2 These requirements do not supersede, but are in addition to any federal, OSHA, state, or local regulations. If a conflict occurs between these requirements and current regulations, the more stringent shall apply.

1.4.3 Subcontractor's Responsibilities

Subcontractor is solely responsible for the health, safety, and protection of all on-site personnel during the performance of the work. Subcontractor shall perform the work specified in these contract documents in accordance with the health and safety requirements specified herein. It shall be the responsibility of Subcontractor to be familiar with the required health and safety regulations in the performance of this work.

Subcontractor shall provide an experienced Health and Safety Officer to implement, monitor, and enforce the Construction HASP.

The Health and Safety Officer shall have a sound working knowledge of federal and state occupational safety and health regulations.

Subcontractor can assume Level D protection is required for bidding purposes. Subcontractor shall be prepared to upgrade in accordance with its Construction HASP.

Should any unforeseen or site-specific safety related factor, hazard, or condition become evident during the performance of the work, Subcontractor shall take immediate action to establish and maintain safe working conditions and to safeguard site personnel, the public, and the environment. Subcontractor shall also immediately inform Engineer of such a condition.

1.4.4 Training Requirements. Subcontractor's training program for workers performing cleanup operations and who will be exposed to contaminants shall meet the following requirements.

1.4.4.1 General Hazardous Waste Operations Training

The Construction HASP will define which personnel will be performing duties with potential for exposure to on-site contaminants that must meet and maintain the following 29 CFR 1910.120 and 29 CFR 1926.65 (e) training requirements:

a. Onsite supervisor shall have 40 hours of off-site hazardous waste instruction.

b. Superintendent shall have 3 days actual field experience under the direct supervision of a trained, experienced supervisor.

c. Onsite supervisor 8 hours refresher training annually.

d. Onsite supervisors must meet these requirements and have an additional 8 hours management and supervisor training specified in 29 CFR 1910.120.

e. Construction workers with potential for exposure to site contaminants shall be OSHA 40-hour HAZWOPER trained with current 8-hour refresher certification.

1.4.4.2 Pre-entry Briefing

Prior to commencement of on-site field activities, all site employees, must attend a site-specific health and safety training session. This session will be conducted by the Site Health and Safety Officer (SHSO) to ensure that all personnel are familiar with requirements and responsibilities for maintaining a safe and healthful work environment. Thoroughly discuss procedures and contents of the accepted HASP. Each employee must sign a training log to acknowledge attendance and understanding of the training. Notify the Engineer at least 5 days prior to the initial site-specific training session. SHSO shall conduct a site-specific training session for new personnel, visitors, and suppliers. Each new employee must sign a training log to acknowledge attendance and understanding of the training.

1.4.4.3 Periodic Sessions

Conduct periodic on-site training at least weekly for personnel assigned to work at the site

1.5 SITE DESCRIPTION AND CONTAMINATION CHARACTERIZATION

1.5.1 Project/Site Conditions

The Engineer's Health and Safety Plan is available for information on the site description and contamination characterization. Maximum concentrations for contaminants of concern at OMC Plant 2 are provided in Table 1 at the end of this specification.

1.6 CONSTRUCTION HEALTH AND SAFETY PLAN

Prepare a site-specific Construction HASP. Submit three copies to Engineer for review no later than 10 days after Notice to Proceed and prior to the start of any field work. The Engineer's Health and Safety plan is available for reference only. Subcontractor should note that the Engineer's plan is not considered adequate for the work contemplated. The Construction HASP shall comply with OSHA standards and at a minimum include:

1.6.1 Organization and persons responsible for health and safety

1.6.2 Identification of anticipated work hazards

1.6.3 Engineering controls used to mitigate work hazards

1.6.4 Safe work practices

1.6.5 List of personal protective equipment

1.6.6 Hazard communication and notification procedures

1.6.7 Hazard monitoring and record keeping

1.6.8 Incident reporting procedures

1.6.9 Emergency response procedures including responsibilities and hospital route

1.7 DAILY TAILGATE MEETINGS

Conduct daily tailgate meetings for all site personnel. Discuss anticipated work hazards, environmental hazards and safe work practices specific to work being performed that day.

2. PRODUCTS (NOT USED)

3. EXECUTION (NOT USED)

TABLE 1
MAXIMUM CONTAMINANT CONCENTRATIONS IN SEDIMENT AND SOIL

	Contaminant	Maximum Concentration (mg/kg)	Depth (feet below grade)
PCBs in Sediment	Total PCBs	683	0-1
PCBs in Soil	Aroclor 1248	317	0-1
	Total PCBs	317	0-1

End of Section 01 35 30

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SECTION 01 41 00
REGULATORY REQUIREMENTS

SECTION 01 41 00

REGULATORY REQUIREMENTS

1. GENERAL

1.1 APPLICABLE CODES

The Subcontractor shall comply with all federal, state, and local rules, ordinances, and regulations relating to buildings, employment, the preservation of public health and safety, and so forth. All necessary permits (other than those already obtained by the Engineer) or certificates of inspection shall be paid for and obtained by the Subcontractor.

1.2 APPLICABLE REGULATIONS

All applicable federal, state, and local laws, ordinances, rules, and regulations are deemed to be included herein the same as though written in full. The Subcontractor shall comply with all authorities having jurisdiction over the work. The following list of regulations does not necessarily include all regulations which may be applicable to site activities and off-site transportation and disposal.

1.2.1 Federal Regulations

1.2.1.1 Disposal of wastes including land disposal restricted wastes at treatment and disposal facilities that are appropriately permitted. Prior to shipment of wastes to any facility, provide evidence to the owner that the facility is in compliance as required.

1.2.1.2 Transport wastes in accordance with all applicable U.S. Department of Transportation and U.S. EPA rules and regulations.

1.2.1.3 Conduct all site work in accordance with the Construction Health and Safety Plan and applicable federal regulations including U.S. Department of Labor Occupational Safety and Health Standards (29 CFR 1910).

1.2.2 State Regulations

1.2.2.1 Environmental Quality regulations

- Illinois Compiled Laws shall govern all activities of the Subcontractor and subcontractor(s) within the state boundaries as applicable.

- Transportation of wastes within the State of Illinois shall be in compliance with applicable laws. Waste haulers shall possess a valid license for transporting waste issued by the Department of Transportation.

- Disposal of non-hazardous wastes in Type II facilities must comply with all inter-county waste management plans.
- Disposal of TSCA wastes must comply with TSCA regulations.

1.2.2.2 Transportation of wastes through states other than Illinois shall be in compliance with all applicable requirements of those states. Waste haulers shall possess a valid license for transporting waste issued by the Department of Transportation.

1.2.2.3 Treatment and disposal facilities shall be in compliance with all requirements of the state in which they are operated.

1.2.3 Local Requirements

1.2.3.1 Ascertain and comply with all applicable county and municipal ordinances, codes, rules, and regulations and obtain all required permits including seasonal load limits which may be imposed to cover transportation on certain roads.

1.2.3.2 Comply with OMC offsite discharge requirements for treated water discharged to waterways. Table 014100 summarizes the offsite discharge limits.

1.2.3.3

TABLE 01 41 00

OFFSITE DISCHARGE LIMITS

Parameter	Effluent Limits	
	Not to Exceed at Any Time	30-Day Average Limit
Ammonia Nitrogen, Total (Apr to Oct)	2.9 mg/L	0.6 mg/L
Ammonia Nitrogen, Total (Nov to Mar)	4.1 mg/L	0.8 mg/L
Chlordane	0.01 ug/L	0.01 ug/L
DDT and Metabolites	0.01 ug/L	0.01 ug/L
Dieldrin	0.01 ug/L	0.01 ug/L
Endrin	0.086 ug/L	0.036 ug/L
Lindane	0.95 ug/L	0.5 ug/L
PCBs (Total)	0.1 ug/L	0.1 ug/L
Total Suspended Solids (TSS)	15 mg/L	NA
Arsenic (Total)	340 ug/L	148 ug/L
Cadmium (Total)	6.6 ug/L	3.2 ug/L
Chromium (Total Trivalent)	2375 ug/L	113.5 ug/L
Copper (Total)	19.2 ug/L	12.4 ug/L
Lead (Total)	187.9 ug/L	9.9 ug/L
Mercury (Total)	1,700 ng/L	1.3 ng/L
Nickel (Total)	623.7 ug/L	69.3 ug/L
Zinc (Total)	159.3 ug/L	159.3 ug/L

2. **PRODUCTS** (NOT USED)

3. **EXECUTION** (NOT USED)

End of Section 01 41 00

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SECTION 01 45 00
QUALITY CONTROL

SECTION 01 45 00
QUALITY CONTROL

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1.1.2 References

1.1.3 Inspection and Testing Services

1.1.4 Submittals

1.1.5 Inspecting Company and Testing Laboratory Responsibility

1.1.6 Inspecting Company and Testing Laboratory Reports

1.1.7 Subcontractor's Responsibilities

1.2 RELATED SECTIONS

1.2.1 Section 01 33 00 - Submittals

1.3 QUALITY ASSURANCE/QUALITY CONTROL AT INSTALLATION

1.3.1 Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce work of specified quality.

1.3.2 Comply fully with manufacturer's instructions, including each step in sequence.

1.3.3 Should manufacturer's instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

1.3.4 Comply with specified standards as a minimum quality for the work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

1.3.5 Perform work by persons qualified to produce workmanship of specified quality.

1.3.6 Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.4 REFERENCES

1.4.1 Conform to reference standard by date of issue current on date for receiving bids.

1.4.2 Obtain copies of standards when required by Contract Documents.

1.4.3 Should specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

1.4.4 The Contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.5 INSPECTION AND TESTING SERVICES

1.5.1 Subcontractor shall employ and pay for services of an independent inspecting company and testing laboratory to perform inspecting and testing services as specified in individual Sections

1.5.2 Employment of inspecting company and testing laboratory and services performed by such inspecting company and testing laboratory in no way relieves Contractor of obligation to perform the Work in accordance with requirements of the Contract Documents.

1.5.3 Quality Assurance

1.5.3.1 Comply with applicable requirements of the American Society for Testing and Materials (ASTM) and the quality assurance project plan included as an attachment to the specifications.

1.5.3.2 The testing laboratory shall be authorized to operate in the State of Illinois.

1.5.3.3 Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to either the National Institute of Standards and Technology or accepted values of natural physical constants.

1.5.3.4 The inspection service shall have a full-time registered engineer on staff or available for reviews.

1.5.4 Collect field samples at the site as required by individual specification sections.

1.5.5 Collect acceptable samples that represent a quality level for the work.

1.6 SUBMITTALS

1.6.1 Prior to start of the Work, submit independent inspecting company and testing laboratory name(s), address, and telephone number, and names of full-time registered Engineer and responsible officer to the Engineer.

1.6.2 Submit copy of report of inspecting company and testing laboratory facilities inspection made by authorized agency during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.

1.7 INSPECTING COMPANY AND TESTING LABORATORY RESPONSIBILITIES

1.7.1 Test samples of materials submitted by Subcontractor

1.7.2 Provide qualified personnel. Cooperate with Engineer and Subcontractor in performance of services.

1.7.3 Perform specified inspecting, sampling, and testing of products and methods of construction in accordance with specified standards.

1.7.4 Ascertain compliance of materials with requirements of the Contract Documents.

1.7.5 Promptly notify Engineer and Subcontractor of observed irregularities, deficiencies, or non-conformance of the Work or products.

1.7.6 Perform additional inspection and tests required by Engineer and as directed by Subcontractor.

1.8 INSPECTING COMPANY AND TESTING LABORATORY REPORTS

1.8.1 After each inspection and test promptly submit 2 copies of reports to Engineer and to Subcontractor.

1.8.2 At a minimum, reports shall include:

1.8.2.1 Date issued.

1.8.2.2 Project title and number.

1.8.2.3 Name and address of inspecting and testing laboratory.

1.8.2.4 Name of inspector.

1.8.2.5 Date and time of sampling or inspection.

1.8.2.6 Identification of product and related specification Section.

1.8.2.7 Location in the Project.

1.8.2.8 Record of temperature and weather.

1.8.2.9 Type of inspection or test.

1.8.2.10 Date of test.

1.8.2.11 Results of tests and observations.

1.8.2.12 Conformance with the Contract Documents.

1.8.3 Limits on Inspecting Company and Testing Laboratory Authority:

1.8.3.1 Inspecting company and testing laboratory may not release, revoke, alter, or enlarge on requirements of the Contract Documents.

1.8.3.2 Inspecting company and testing laboratory may not approve or accept any portion of the Work.

1.8.3.3 Inspecting company and testing laboratory may not assume or perform any duties of Subcontractor.

1.8.3.4 Inspecting company and testing laboratory has no authority to stop the Work.

1.9 SUBCONTRACTOR'S RESPONSIBILITIES

1.9.1 Deliver to inspecting company and testing laboratory at designated location, adequate samples of materials proposed to be used which require testing.

1.9.2 Cooperate with personnel of independent inspecting company and testing laboratory, and provide safe access to the site.

1.9.3 Provide incidental labor and facilities:

1.9.3.1 To provide access to the Work to be tested.

1.9.3.2 To obtain and handle samples at the Site or at source of products to be tested.

1.9.3.3 To facilitate tests and inspections.

1.9.3.4 For inspecting company and testing laboratory's exclusive use for storage *and curing of test samples.*

1.9.4 Furnish copies of product test reports.

1.9.5 Promptly notify Engineer of all observed irregularities or non-conformances.

1.9.6 Retesting required because of Subcontractor negligence or non-conformance to specified requirements shall be performed by the same inspecting and testing laboratory at Subcontractor's expense and at no additional cost to Owner.

2. PRODUCTS - (NOT USED)

3. EXECUTION - (NOT USED

End of Section 01 45 00

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SECTION 01 50 00
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

SECTION 01 50 00

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1. GENERAL

1.1 SECTION CONTENTS

1.1.1 Temporary controls: barriers, protection of the work, water and dust/pollution control.

1.1.2 Construction facilities: roads, parking, progress cleaning, project signage.

1.2 RELATED SECTIONS

1.2.1 Section 01 33 00 - Submittals

1.2.2 Section 01 70 00 - Project Closeout

1.3 TEMPORARY ELECTRICITY

1.3.1 There will be no onsite power supply provided by the owner or Engineer. If temporary electricity is provided by Subcontractor, then the use must conform to these specifications.

1.3.2 Provide power outlets for construction operations. All outlets must be GFI protected without exception. Provide flexible power cords as necessary. All flexible power cords must be for outdoor use, UL-listed, and in good condition.

1.3.3 Permanent convenience receptacles may not be used during construction.

1.3.4 Provide adequate distribution equipment, wiring, and outlets to provide single-phase branch circuits for power and lighting.

1.4 TEMPORARY LIGHTING

1.4.1 Provide and maintain lighting for construction operations to achieve a minimum lighting level of 2 watt per square foot, if work will be conducted during non-daylight hours.

1.4.2 Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

1.4.3 Maintain lighting and provide routine repairs.

1.5 BARRIERS

1.5.1 Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

1.5.2 Provide barricades and cover walkways as required by governing authorities for public rights-of-way.

1.5.3 Provide protection for plant life designated to remain.

1.5.4 Protect vehicular traffic, stored materials, site, and structures from damage.

1.6 FENCING

1.6.1 Construction: Access to the construction areas must be restricted. Except where required on drawings, additional fencing is at Subcontractor's option. Submit details of fencing for Engineer's review 30 days after Notice to Proceed.

1.7 WATER CONTROL

1.7.1 Provide Storm Water Pollution Prevention Controls in accordance with the EPA-approved "Erosion and Sediment Control Plan" provided as an Attachemnt to these Specifications.

1.7.2 Grade site to drain.

1.7.3 Provide water barriers as required to protect site from soil erosion.

1.7.4 Provide necessary silt fences, ditches, culverts, etc. to control runoff.

1.7.5 Dispose of contaminated water in accordance with these specifications and applicable site, state and federal permits.

1.8 DUST AND PARTICULATE CONTROL

1.8.1 Minimize raising dust from construction operations. Employ engineering controls and administrative controls to control emission of fugitive dust from the Work Area.

1.8.2 Implement and maintain dust and particulate control measures immediately during construction.

1.8.3 Provide positive means to prevent airborne dust from dispersing into atmosphere. Use potable water for dust and particulate control.

1.8.4 Administrative means of dust control may include limiting equipment speeds, limiting traffic volume to that which is essential, limiting the height at which materials are unloaded, and minimizing dust-generating activities during periods of high wind.

1.8.5 As a minimum, use appropriate covers on trucks hauling fine or dusty material and use watertight vehicles to haul wet materials.

1.8.6 Prevent dust from becoming a nuisance to adjacent property owners or occupants.

1.8.7 Apply water to support roads, traveled surfaces, and stockpiles using a system consisting of a storage tank, spray bar, and gauge-equipped pump. Water to be used shall be clear and free from salts, oils, and other injurious materials.

1.8.8 Engineer may stop work at any time when Subcontractor's control of dusts and particulates is inadequate for the wind conditions present at the Site.

1.8.9 In the event that Subcontractor's dust and particulate control is not sufficient for controlling dusts and particulates into the atmosphere, work shall be discontinued and a meeting held between Engineer and Subcontractor to discuss the procedures that Subcontractor proposes to resolve the problem.

1.9 POLLUTION CONTROL

Comply with Section 01 57 20 Environmental Protection.

1.10 PROTECTION OF INSTALLED WORK

1.10.1 Protect installed work and provide special protection where specified in individual sections.

1.10.2 Provide temporary and removable protection for installed products. Control activity in immediate work areas to minimize damage.

1.10.3 Prohibit traffic from landscaped areas.

1.11 ACCESS ROADS

1.11.1 Existing Roads: Reasonable use of existing on-site roads for construction traffic is permitted subject to the following conditions:

a. Do not interrupt or interfere with traffic on roads at any time except where specified on the Drawings and proper notice regarding open-trench crossings has been given to Engineer.

b. Improve existing roads as Subcontractor may require to perform the Work.

c. Comply with weight and load size restrictions where applicable.

d. Tracked vehicles are not allowed on off-site paved areas.

e. Provide a traffic flow plan for review by Engineer for site operations.

1.11.2 Temporary Roads:

a. Locate roads as approved by Engineer. Obtain Engineer's prior approval for location and extent of temporary roads.

b. Construct temporary access roads from public thoroughfares to serve construction area of a width and load bearing capacity to provide unimpeded traffic for construction purposes as Subcontractor requires for performance of the Work.

c. Preparation: Clear areas, provide surface and storm drainage of road and adjacent areas.

1.11.3 Maintenance and Use:

a. Maintain temporary access roads in a sound condition, properly graded, and free of ruts, washboard, potholes, ponding, ice, snow, mud, soft material, excavated material, construction equipment, and products.

b. Maintain existing paved areas used for construction; promptly remove standing water and repair breaks, potholes, low areas, and other deficiencies, to maintain paving and drainage in original or specified condition.

c. Remove mud from vehicle wheels before entering public roads.

d. Prevent contamination of access roads. Immediately scrape up debris or material on access roads which is suspected to be contaminated as determined by Engineer; transport and place into designated area approved by Engineer. Clean access roads at least once per shift.

1.11.4 Removal and Repair:

a. Remove temporary materials and construction at Completion at Subcontractor's sole expense.

b. Repair existing facilities damaged by use to Engineer's satisfaction.

1.12 SECURITY

No security will be provided by the owner or Engineer. It is anticipated that site access and entry will be controlled by the Subcontractor.

1.12.1 Maintain a site log. Log entry and exit of persons including name, time stamp, and affiliation. Provide a copy of the site log to the Engineer upon request.

1.13 PARKING

1.13.1 Arrange for temporary surface parking areas to accommodate construction personnel and Engineer.

1.13.2 When site space is not adequate, provide additional off-site parking.

1.13.3 Do not allow vehicle parking on existing off-site roads.

1.14 CLEANING

Comply with Section 01 74 00 Cleaning and Waste Management.

1.15 *TEMPORARY SANITARY FACILITIES*

1.51.1 Subcontractor shall furnish and maintain a chemical toilet for all personnel on the project.

1.16 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

1.16.1 Remove temporary above grade or buried utilities, equipment, facilities, materials, prior to substantial completion inspection.

1.16.2 Clean and repair damage caused by installation or use of temporary work.

1.16.3 Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

2. PRODUCTS - (NOT USED)

3. EXECUTION - (NOT USED)

End of Section 01 50 00

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SECTION 01 57 20
ENVIRONMENTAL PROTECTION

SECTION 01 57 20
ENVIRONMENTAL PROTECTION

1. GENERAL

1.1 DEFINITIONS

1.1.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.1.2 Environmental Protection

Environmental protection is the prevention or control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2 GENERAL REQUIREMENTS

Minimize environmental pollution and damage that may occur as the result of construction operations. The environmental resources within the project boundaries and those affected outside the limits of permanent work must be protected during the entire duration of this contract. Comply with all applicable environmental Federal, State, and local laws and regulations. Any delays resulting from failure to comply with environmental laws and regulations will be the Subcontractor's responsibility.

1.3 SUBCONTRACTORS

Ensure compliance with this section by subcontractors.

1.4 JOINT CONDITION SURVEY

Prior to start of any on-site construction activities, the Subcontractor and the Engineer will make a joint condition survey. Immediately following the survey, the Subcontractor will prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Subcontractor's assigned area and access route(s), as applicable. This survey report will be signed by both the Subcontractor and the Engineer upon mutual agreement as to its accuracy and completeness. The Subcontractor must protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the work under the contract.

Comply with any special environmental requirements listed in this section.

1.5 NOTIFICATION

The Engineer will notify the Subcontractor in writing of any observed noncompliance with Federal, State, or local environmental laws or regulations, permits, and other elements of the Subcontractor's Environmental Protection plan. After receipt of such notice, the Subcontractor will inform the Engineer of the proposed corrective action and take such action when approved by the Engineer. The Engineer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions will be granted or equitable adjustments allowed for any such suspensions. This is in addition to any other actions the Engineer may take under the contract, or in accordance with Federal Acquisition Regulations or Federal Law.

1.6 PAYMENT

No separate payment will be made for work covered under this section. Payment of fees associated with environmental permits, application, and/or notices obtained by the Subcontractor, and payment of all fines/fees for violation or non-compliance with Federal, State, Regional, and local laws and regulations are the Subcontractor's responsibility. All costs associated with this section must be included in the contract price.

1.7 ENVIRONMENTAL PROTECTION PLAN

Two weeks after Notice to Proceed, submit an Environmental Protection Plan for review and approval by the Engineer. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Subcontractor must address during construction. Issues of concern must be defined within the Environmental Protection Plan as outlined in this section. Address each topic at a level of detail commensurate with the environmental issue and required construction task(s). Topics or issues which are not identified in this section, but are considered necessary, must be identified and discussed after those items formally identified in this section. Prior to submittal of the Environmental Protection Plan, meet with the Engineer for the purpose of discussing the implementation of the initial Environmental Protection Plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Subcontractor's Environmental Protection Plan. The Environmental Protection Plan must be current and maintained on site by the Subcontractor.

1.7.1 Compliance

No requirement in this Section will relieve the Subcontractor of any applicable Federal, State, and local environmental protection laws and regulations. During construction, the Subcontractor will be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.7.2 Contents

Include in the Environmental Protection Plan, but not limit it to, the following:

1.7.2.1 Name(s) of person(s) within the Subcontractor's organization who is (are) responsible for ensuring adherence to the Environmental Protection Plan.

1.7.2.2 Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable.

1.7.2.3 Name(s) and qualifications of person(s) responsible for training the Subcontractor's environmental protection personnel.

1.7.2.4 Description of the Subcontractor's environmental protection personnel training program.

1.7.2.5 Name(s) and qualifications of person(s) responsible for ensuring adherence to the Erosion and Sediment Control Plan.

1.7.2.6 Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site.

1.7.2.7 Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Plan shall include measures to minimize the amount of mud and sand transported onto paved public roads by vehicles or runoff.

1.7.2.8 Decontamination plan including description of facilities and procedures for decontamination of trucks, construction equipment and rented facilities (such as road mats) before they leave the site. The plan shall also include methods for containment and management of wastes resulting from these activities.

1.7.2.9 Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.

1.7.2.10 Spill Control plan including procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. Include in this plan, as a minimum:

(a) The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual will immediately notify the Engineer and the local Fire Department in addition to

the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. Include in the plan a list of the required reporting channels and telephone numbers.

(b) The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup.

(c) Training requirements for Subcontractor personnel and methods of accomplishing the training.

(d) A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

(e) The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency.

(f) The methods and procedures to be used for expeditious contaminant cleanup.

1.7.2.11 A non-hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris and schedules for disposal.

1.7.2.12 An air pollution control plan detailing provisions to ensure that dust, debris, materials, trash, etc., do not become airborne and travel off the project site.

1.7.2.13 A contaminant prevention plan that identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of these materials.

1.7.2.14 A wastewater management plan that identifies the methods and procedures for management and/or discharge of wastewaters which are directly derived from construction activities. For disposal to a waterway, the plan must include documentation that the water will meet discharge criteria. (It is anticipated that the Subcontractor will not conduct activities that result in offsite discharge of water)

1.7.3 Appendix

Attach to the Environmental Protection Plan, as an appendix, copies of all environmental permits, permit application packages, approvals to construct, notifications, certifications, reports, and termination documents.

1.8 ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations from the drawings, plans and specifications, requested by the Subcontractor and which may have an environmental impact, will be subject to approval by the Engineer and may require an extended review, processing, and approval time. The Engineer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Engineer determines that the proposed alternate method will have an adverse environmental impact.

2. PRODUCTS (NOT USED)

3. EXECUTION

3.1 ENVIRONMENTAL PROTECTION PLAN

3.1.1 Subcontractor shall implement provisions of the Environmental Protection Plan during the period of performance.

3.2 ENVIRONMENTAL PERMITS AND COMMITMENTS

Subcontractor shall abide by specific permit requirements included in these specifications.

3.3 ENDANGERED SPECIES

3.3.1 Possible threatened or endangered species identified during site survey activities include:

Blanding's Turtle
Piping Plover
St. John's Wart
Beach Maram Grass

3.3.2 Confine all activities to areas defined by the drawings and specifications.

3.3.3 Do not remove, destroy, injure or disturb endangered species.

3.3.4 If endangered species are observed in work area, stop work and immediately notify Engineer.

3.3.4 Engineer will mark areas of known habitats of endangered species prior to commencement of site work.

3.3.5 Additional areas will be marked by the Engineer if other habitats of endangered species become known during site activities.

3.4 LAND RESOURCES

Confine all activities to areas defined by the drawings and specifications. Identify any land resources to be preserved within the work area prior to the beginning of any construction. Do not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval, except in areas indicated on the drawings or specified to be cleared.

3.4.1 Work Area Limits

Mark the areas that need not be disturbed under this contract prior to commencing construction activities. Mark or fence isolated areas within the general work area which are not to be disturbed. Protect monuments and markers before construction operations commence.

3.4.2 Erosion and Sediment Controls

Providing erosion and sediment control measures in accordance with Federal, State, and local laws and regulations is the Subcontractor's responsibility. The erosion and sediment controls selected and maintained by the Subcontractor shall be such that water quality standards are not violated as a result of construction activities.

3.4.3 Subcontractor Facilities and Work Areas

Place field offices, staging areas, stockpile storage, and temporary buildings in areas designated on the drawings or as directed by the Engineer. Temporary movement or relocation of Subcontractor facilities will be made only when approved. Erosion and sediment controls must be provided for any on-site borrow and spoil areas to prevent sediment from entering the river.

3.4.4 Fuel and Lubricants

Storage, fueling, and lubrication of equipment and motor vehicles must be conducted in a manner that affords the maximum protection against spill and evaporation. Manage and store fuel, lubricants, and oil in accordance with all Federal, State, Regional, and local laws and regulations.

3.4.5 Landscape

Trees, shrubs, vines, grasses, land forms, and other landscape features indicated and defined on the drawings to be preserved must be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. Restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area as specified in Section 32 30 00 – Site Restoration.

3.5 WATER RESOURCES

Monitor all water areas affected by construction activities to prevent pollution of surface and ground waters. Do not apply toxic or hazardous chemicals to soil or vegetation unless otherwise indicated. For construction activities immediately adjacent to impaired surface waters, the Subcontractor must be capable of quantifying sediment or pollutant loading to that surface water when required by State or Federal-issued Clean Water Act permits.

3.5.1 Water Quality Monitoring

Engineer will test filtered water prior to onsite release; no other monitoring will be conducted. If discharges to offsite waterways occur, they must comply with discharge limitations in Table 01 41 00.

3.6 AIR RESOURCES

Equipment operation, activities, or processes will be in accordance with all Federal and State air emission and performance laws and standards.

3.6.1 Dust Control

Dust particles must be controlled at all times. Maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. Provide sufficient, competent equipment available to accomplish these tasks.

Odors from construction activities must be controlled at all times. The odors must be in compliance with State regulations and/or local ordinances and may not constitute a health hazard.

3.6.2 Sound Intrusions

Keep construction activities under surveillance and control to minimize noise. Comply with the provisions of the State of Illinois and City of Waukegan rules and local noise ordinances.

3.6.3 Burning

Burning will not be allowed on the project site unless specified in other sections or authorized in writing by the Engineer. The specific time, location, and manner of burning will be subject to approval.

3.7 MAINTENANCE OF POLLUTION CONTROL FACILITIES

Maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.8 TRAINING OF SUBCONTRACTOR PERSONNEL

The Subcontractor's personnel must be trained in all phases of environmental protection and pollution control. Conduct environmental protection/pollution control meetings for all personnel prior to commencing construction activities. Additional meetings must be conducted for new personnel and when site conditions change.

3.9 WASTE MANAGEMENT

Manage waste in compliance with Section 01 74 00 Cleaning and Waste Management.

End of Section 01 57 20

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PRODUCT REQUIREMENTS

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PRODUCT REQUIREMENTS

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1.1.3 Storage and protection

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1.1.5 Substitutions

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1.2.1 Section 00 21 13 - Instructions to Bidders: Material Substitutions

1.2.2 Section 01 33 00 - Submittals

1.2.3 Section 01 45 00 - Quality Control

1.3 PRODUCTS

1.3.1 Products include materials, equipment, components, fixtures, systems, and assemblies forming the work. *It does not include machinery and equipment used* for preparation, fabrication, conveying, and installation of the work. Products may also include existing materials or components required for reuse.

1.3.2 Do not use materials removed from existing premises, except as specifically permitted by the Contract Documents.

1.4 TRANSPORTATION AND HANDLING

1.4.1 Transport and handle products in accordance with manufacturer's instructions.

1.4.2 Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products delivered are undamaged.

1.4.3 Provide proper equipment and skilled personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.5 STORAGE AND PROTECTION

1.5.1 Store and protect products in accordance with manufacturer's instructions, with all seals and labels intact and legible.

1.5.2 Store products in temperature controlled environments when necessary to prevent freezing. Comply with manufacturers' instructions regarding temperature at which products should be stored.

1.5.3 Store products in moisture-tight enclosures when moisture can detrimentally affect the quality of the product.

1.5.4 For exterior storage of fabricated products, place on sloped supports, above ground.

1.5.5 Cover products subject to deterioration with impervious sheet covering. Provide proper ventilation to prevent condensation.

1.5.6 Arrange storage of products to permit access for inspection. Periodically inspect to ensure products are undamaged and maintained under specified conditions.

1.5.7 Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

1.5.8 All material installed but not in operation shall be considered in storage and shall be protected accordingly.

1.6 PRODUCT OPTIONS

1.6.1 Products specified by reference standards or by description only: any products meeting those standards or description.

1.6.2 Products specified by naming one or more manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

1.6.3 Products specified by naming one or more manufacturers with a provision for substitution (or equal): submit a written request for substitution for any manufacturer not named.

1.7 SUBSTITUTIONS

1.7.1 Engineer will consider requests for substitution only within 15 days after date established in Notice to Proceed.

1.7.2 Substitutions may be considered when a product becomes unavailable through no fault of the Subcontractor.

1.7.3 Document each request with complete data substantiating compliance of proposed substitution with Contract Document requirements.

1.7.4 A request constitutes a representation that the contractor:

1.7.4.1 Has investigated the proposed product and determined that it meets or exceeds the quality level of the specified product.

1.7.4.2 Will provide the same warranty for the substitution as for the specified product.

1.7.4.3 Has investigated proposed product and determined that it meets or exceeds the performance criteria specified and intended for originally specified products.

1.7.4.4 Will coordinate installation and make changes to other work which may be required for the work to be complete and operational with no additional cost to Owner.

1.7.4.5 Will waive claims for additional costs and time extension which may subsequently become apparent.

1.7.4.6 Will reimburse Owner for review or redesign services associated with acceptance of the substitute product.

1.7.5 Substitutions will not be considered when they are indicated or implied on shop drawings or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

1.7.6 Substitution Submittal Procedure:

1.7.6.1 Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.

1.7.6.2 Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. See Section 01 33 00 for submittal requirements.

1.7.6.3 Engineer will notify Subcontractor, in writing, of decision to accept or reject requests.

2. PRODUCTS - (NOT USED)

3. EXECUTION - (NOT USED)

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1.2.2 Section 01 50 00 – Construction Facilities and Temporary Controls

1.2.3 Section 01 74 00 – Cleaning and Waste Management

1.3 FINAL INSPECTION

1.3.1 *Notify Engineer in writing when project is substantially complete.*

1.3.2 Engineer will make an inspection of the completed work and will prepare and submit to Subcontractor a list of items to be completed or corrected.

1.3.3 Take immediate steps to remedy the listed deficiencies and notify Engineer in writing that the project is complete and ready for final inspection.

1.3.4 Engineer and Owner will make a final inspection.

1.4 FINAL CLEANING

1.4.1 Execute cleaning requirements in Section 01 74 00 Cleaning and Waste Management

1.5 PROJECT RECORD DOCUMENTS

1.5.1 Provide to Engineer at closeout, one set of the following record documents; including all revision, modifications, additions, and changes to the Work:

1.5.1.1 *Contract drawings*

1.5.1.2 Specifications

1.5.1.3 Addenda

1.5.1.4 Change orders and all other modifications to the Contract.

1.5.1.5 Reviewed and approved shop drawings, product data, and samples

1.5.2 Record documents are separate from documents used for construction.

1.5.3 Record all information concurrent with construction progress.

1.5.4 Specifications: Legibly mark and record at each Product section a description of actual products installed including the following:

1.5.4.1 Manufacturer's name and product model and number

1.5.4.2 Product substitution or alternates used

1.5.4.3 Changes made by Addenda and modifications

1.5.5 Record (As-Built) Drawings and Shop Drawings: Legibly mark each item to record actual construction, including:

1.5.5.1 Actual dimensions and elevations

1.5.5.2 Actual horizontal and vertical locations of underground utilities and appurtenance referenced to buildings, bench marks, and local data.

1.5.5.3 Actual locations of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of work.

1.5.5.4 All field changes of dimensions, details, and elevations.

1.5.5.5 All details not shown on the original drawings.

1.5.5.6 Provide a final survey with final grades and elevations.

1.5.6 Submit all documents required in General Conditions to Engineer with Application for Final Payment.

1.6 FINAL PAYMENT

Submit application for final payment identifying previous payments, and sum remaining due. Prepare application as stipulated in Section 01 20 00 Application for Payment.

1.7 CLOSEOUT SUBMITTALS

Prior to final payment, submit the following:

1.7.1. Guarantees and bonds

1.7.2. Duplicate notarized copies of any legally required permit inspections

1.7.3. Subcontractor's waiver of lien

1.7.4. Separate waivers of lien for subcontractors, suppliers, and others with lien rights against the Owner

2. PRODUCTS - (NOT USED)

3. EXECUTION - (NOT USED)

End of Section 01 70 00

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SECTION 01 74 00
CLEANING AND WASTE MANAGEMENT

SECTION 01 74 00

CLEANING AND WASTE MANAGEMENT

1. GENERAL

1.1 GENERAL REQUIREMENTS

1.1.1 Keep the site clean while construction is in progress.

1.1.2 Prevent remediation-derived wastes from polluting the environment.

1.1.3 Manage wastes on site such that they are not a hazard to on-site personnel.

1.1.4 When work is complete, leave project site clean and ready for occupancy.

1.2 *DESCRIPTION OF WORK*

Keep site clean. Prevent remediation-derived wastes from polluting the environment. Manage wastes safely so that they are not a hazard to workers handling the waste. Comply with regulations pertaining to management of waste.

1.3 SUBMITTALS

1.3.1 Waste Management Plan

Submit a Waste Management Plan within 14 days of notice to proceed. The plan shall describe management of waste resulting from remedial activities. The plan shall include:

a. Names of individuals responsible for implementation of the plan
b. A list of the types of solid wastes that will be generated during remediation and their sources
c. A list of the types of liquid wastes that will be generated during remediation and their sources
d. Method of storage of each type of waste
e. Marking and labeling of waste storage containers
f. Methods of characterizing each waste to determine waste class for disposal
g. Method of collection of representative samples for waste characterization
h. Laboratories to be used for characterization of waste
i. Frequency of characterization
j. Method of disposal of each type of waste including but not limited to dredge material, wastewater, process residuals (such as spent media, nonaqueous-phase liquid, and sludge), personal protective equipment, unused chemicals, construction debris, used oil, plant-based waste, and general refuse.
k. List of off-site disposal facilities to be used. Include name, location, phone number, and copy of permit or license.
l. Waste acceptance criteria for each off-site disposal facility to be used
m. List of recyclable or salvageable materials
n. List of facilities that recyclable or salvageable materials will be sent to. Include name, location, phone number, and copy of permit or license.

Revise and resubmit the Waste Management Plan as required by the Engineer. Approval of Subcontractor's Plan will not relieve the Subcontractor of responsibility for compliance with applicable environmental regulations. Distribute copies of the Waste Management Plan to each subcontractor.

1.3.2 Forms

Submit draft waste manifests to be used for transportation and disposal of each type of waste.

1.3.3 Records

Submit waste manifests, weight tickets, receipts, and invoices specifically identifying the project and waste material. Payment will not be made without these records.

1.3.4 Reports

Submit monthly reports and a final report. Monthly and final reports shall include project name, quantity of waste generated during that period, and cumulative totals for the project. Each report shall include supporting documentation such as manifests, weight tickets, receipts, and invoices specifically identifying the project and waste material. Include timber harvest and demolition information, if any.

1.3.5 Products

Submit manufacturer's literature for products related to waste storage.

2. PRODUCTS (NOT USED)

3. EXECUTION

3.1 CLEANING DURING CONSTRUCTION

3.1.1 Perform cleaning operations daily so that structures, grounds, and public property are free from accumulations of waste materials and rubbish.

3.1.2 Sprinkle dry materials with water to prevent blowing dust.

3.1.3 Clean site and public properties weekly and dispose of waste materials, debris, and rubbish.

3.2 WASTE MANAGEMENT

3.2.1 General

3.2.1.1 Perform all work in compliance with the Subcontractor's approved Waste Management Plan. Approval of the plan does not preclude the Subcontractor from compliance with applicable Federal, State, and local regulations.

3.2.1.2 Control accumulation of waste materials and trash. Recycle or dispose of collected materials off-site at regular intervals. Do not allow accumulations of wastes that create hazardous conditions.

3.2.1.3 Do not burn or bury rubbish and waste materials on project site.

3.2.2 Records

3.2.2.1 Records shall be maintained to document the quantity of waste generated; the quantity of waste diverted through sale, reuse, or recycling; and the quantity of waste disposed. Quantities may be measured by weight or by volume, but must be consistent throughout. List each type of waste separately noting the disposal or diversion date. Identify the facility receiving the waste.

3.2.3 Storage

3.2.3.1 Use appropriate temporary storage to isolate waste from the environment.

3.2.3.2 Use storage units that are in good condition and constructed of materials that are compatible with the material to be stored. If multiple storage units are required, label each unit with an identification number and the type of waste to be stored. A water-proof cover shall be placed over the units to prevent precipitation from contacting the stored material. Secure covers suitably to protect from wind.

3.2.3.3 Stockpiles may be used for storage of treated or untreated dredge material. If stockpiles are used:

1) Protect the stockpiles from weather and implement controls to prevent freezing
2) If stockpile areas are paved, clean and seal cracks in existing pavement before stockpiling material.
3) If stockpiles areas are unpaved, install a minimum 40 mil thick geomembrane over a graded and compacted subgrade. The ground surface on which the geomembrane is to be placed shall be free of rocks greater than 0.5 inches in diameter and any other object which could damage the membrane.
4) Provide a water-proof cover free of holes or other damage to prevent precipitation from entering the stockpile. Secure covers suitably to protect from wind.

5) Install berms surrounding the stockpile area, a minimum of 12 inches in height. Vehicle access points shall also be bermed.
6) Slope the liner system to allow collection of leachate. Remove and store liquids in accordance with the Subcontractor's approved Waste Management Plan.

3.2.3.4 Aqueous phase liquids may be stored in a holding tank as long as they do not prevent adequate treatment to the required pre-treatment criteria before discharge to the site.

3.2.3.5 Store volatile wastes in covered metal containers and remove from premises daily.

3.2.4 Recycling (if performed)

3.2.4.1 Separate, store, protect, and handle at the site identified recyclable and salvageable waste products in a manner that maximizes recyclability and salvagability of identified materials. Recyclable materials shall be placed into a single container and then transported to a recycling facility where the recyclable materials are sorted and processed.

3.2.4.2 Provide the necessary containers, bins, and storage areas to facilitate effective waste management and clearly and appropriately identify them.

3.2.4.3 Provide materials for barriers and enclosures around recyclable material storage areas which are nonhazardous and recyclable or reusable. Locate out of the way of construction traffic. Provide adequate space for pick-up and delivery and convenience to subcontractors. Recycling and waste bin areas are to be kept neat and clean.

3.2.4.4 Recyclable materials shall be handled to prevent contamination of materials from incompatible products and materials. Clean contaminated materials prior to placing in collection containers. Use cleaning materials that are nonhazardous and biodegradable.

3.2.5 Hazardous Waste

Hazardous wastes as defined in 40 CFR 261, or as defined by applicable State and local regulations shall be managed and stored in compliance with 40 CFR 262. Take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. Segregate hazardous waste from other materials and wastes; protect it from the weather by placing it in a safe covered location, and take precautionary measures against accidental spillage.

3.2.6 Transportation and Disposal of Waste

Transport and dispose of waste in compliance with Section 02 81 00 - Transportation and Disposal of Nonhazardous and Hazardous Waste.

3.2.7 On-Site Disposal of Aqueous-Phase Wastes

On-site disposal of liquid wastes must not result in any off-site releases of water during the project. Any off-site releases must comply with Table 01 41 00.

3.3 FINAL CLEANING

3.3.1 Excavate and dispose of soil impacted by remediation activities.

3.3.1 Remove debris directly or indirectly resulting from construction activities.

3.3.2 Clean paved surfaces and rake clean landscaped areas.

End of Section 01 74 00

DIVISION 02
EXISTING CONDITIONS

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SECTION 02 21 00
SURVEY AND GRADE CONTROL

SECTION 02 21 00

SURVEY AND GRADE CONTROL

1. GENERAL

1.1 REFERENCES

Not used.

1.2 DEFINITIONS

BM—Benchmark
CAD—Computer-aided drafting
NAD 83—North American Datum of 1983
NGVD 29—National Geodetic Vertical Datum of 1929

1.3 SUBMITTALS

The following shall be submitted in accordance with Section 01 33 00 Submittals:

Preconstruction Submittals

Submit the following within 14 days after notice to proceed:

1.3.1 Submit resumes for survey personnel and photocopy of Illinois State license of crew chief.

1.3.2 Certifications as required by the Construction Health and Safety Plan.

Survey Data

Submit survey data in hard copy and electronic format (MS Excel or compatible). Submit survey drawings in hard copy and electronically in Microstation® format or compatible versions of AutoCAD as approved by the Engineer. Provide drawing legend with all submittals. Survey files shall be provided no later than one week after field data are gathered and drawings shall be provided within 14 days. Interim hard copy drawings will be 11x17 size drawings. Engineer will provide pre-excavation survey data.

1.3.3 Final Pre-Excavation Record Survey for Dunes Area

Submit pre-excavation survey hard copy and electronic data within one week of completing the final pre-excavation survey or Dunes Area. Hard copy will consist of three ANSI D drawing packages, each set with original Illinois Licensed Surveyor stamp

1.3.4 Final Post-Excavation Record Survey

Submit post-excavation survey hard copy and electronic data within one week of completing the final post-excavation surveys. Hard copy will consist of three

ANSI D drawing packages, each set with original Illinois Licensed Surveyor stamp.

1.3.4 Final Post-Restoration Record Survey

Submit post-restoration survey for Area 5, the ODC Area, the Dune Area, and North Ditch (onsite portion only) hard copy and electronic data within one week of completing the final post-restoration surveys. Hard copy will consist of three ANSI D drawing packages, each set with original Illinois Licensed Surveyor stamp.

1.3.5 East Containment Cell Cap Extension and North Ditch Geotextile Cover Record Survey

Submit East Containment Cell cap extension and North Ditch geotextile cover survey hard copy and electronic data within one week of completing the final post installation surveys. Hard copy will consist of three ANSI D drawing packages, each set with original Illinois Licensed Surveyor stamp.

1.3.6 Close-out Submittals

Copies of all field books, notes, and other data developed in performing surveying shall be turned in to the Engineer upon request.

1.4 DESCRIPTION OF WORK

Verify existing (pre-excavation) grades, post-excavation grades, post backfilling grades and post-capping grades of areas to be remediated. Some areas to be surveyed may be under 1 to 4 feet of water.

The survey crew shall be supervised by a professional surveyor licensed in the State of Illinois. The surveyor shall be present on site with a frequency to maintain project quality and schedule. The surveyor shall keep neat and legible notes of measurement and calculations made concerning field activities. Work under this section shall include:

1.4.1 Delineation of work areas. Survey and stake out areas where work is to be performed as shown on the drawings.

1.4.2 Survey and stake out underground utility protection cooridors to protect sanitary force main and high pressure natural gas line.

1.4.3 Survey and stake out the limits of the East Containment Cell to protect its integrity during extension activities.

1.4.4 Verification of extent and grades. Verify extent of work completed and attainment of design grades for excavating and capping.

1.4.5 Progress surveys will be submitted for payment and quality control/quality assurance purposes.

1.4.6 Record drawings survey. After completion of the project perform an "as-built" survey.

Locate and tie-in temporary benchmarks shown on drawings and establish survey lines and additional temporary benchmarks as necessary.

This work always requires reporting of northings, eastings, and elevations and other data as requested in specific sections, at all surveyed points. All data shall be presented in the coordinate system used on drawings.

1.5 MEASUREMENT AND PAYMENT

Surveying will be considered incidental to other work. There will be no payment for work in this section.

2. PRODUCTS

2.1 EQUIPMENT

2.1.1 The Subcontractor shall use state-of-the-art survey equipment capable of performing the work specified herein. Horizontal and vertical measurements shall be accurate to 0.1 foot.

2.1.2 The Subcontractor shall furnish all equipment, tools, material, and labor needed to perform this work.

2.2 PERSONNEL

2.2.1 The survey crew chief shall be a professional surveyor licensed in the State of Illinois.

3. EXECUTION

3.1 GENERAL

3.1.1 The survey crew shall perform all work in compliance with the approved Construction Health and Safety Plan.

3.1.2 The Subcontractor shall be responsible for decontamination of survey equipment.

3.2 REFERENCE SYSTEM

3.2.1 Reference all horizontal measurements to Illinois State Plane Coordinate System referenced to NAD 83.

3.2.2 Reference all vertical measurements to NGVD 29.

3.3 SURVEYING

3.3.1 Ditch surveys shall be done with cross section intervals not to exceed 20 feet on centers from which a 1-foot contour interval map shall be developed. Survey

points shall be taken at significant boundaries (such as change in type of backfill or tree-line), at significant changes in grade (such as the top and bottom of slopes), and 50 feet beyond the edge of disturbed areas. Survey point spacing on each cross section should not exceed 25 feet between points.

3.3.2 Upland topographic surveys of disturbed laydown and staging areas shall be conducted with sufficient grid density to generate 1-foot contour interval maps.

3.3.3 Conduct a pre-excavation topographic survey of Dune Areas to be excavated.

3.3.4 Mark areas to be excavated and capped. Also mark the extent of the East Containment Cell cap extension and North Ditch geotextile cover limits as shown on the drawings. Coordinate surveys with other sections requiring delineation of work areas.

3.3.5 Conduct a post-excavation topographic survey to document excavation to design grades.

3.3.6 Conduct a post-construction topographic survey of the East Containment Cell cap extension and North Ditch geotextile cover to document attainment of design grade and limits.

3.3.7 Conduct a post-backfill topographic survey of dunes area to demonstrate restoration of grades to original conditions.

3.4 SCHEDULE

3.4.1 The Subcontractor shall complete the surveying specified herein according to the Subcontractor's approved construction schedule.

End of Section 02 21 00

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SECTION 02 81 00
TRANSPORTATION AND DISPOSAL OF NONHAZARDOUS AND HAZARDOUS MATERIALS

SECTION 02 81 00
TRANSPORTATION AND DISPOSAL OF NONHAZARDOUS AND HAZARDOUS MATERIALS

1. GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. DEPARTMENT OF TRANSPORTATION (DOT)

DOT 4500.9R	Defense Transportation Regulation, Part 2, Cargo Movement, Chapter 204, Hazardous Material

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR 302	Designation, Reportable Quantities, and Notification
40 CFR 61	National Emission Standards for Hazardous Air Pollutants
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
49 CFR 107	Hazardous Materials Program Procedures
49 CFR 172	Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
49 CFR 173	Shippers - General Requirements for Shipments and Packages
49 CFR 178	Specifications for Packages

1.2 DEFINITIONS

1.2.1 Hazardous Material

A substance or material which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated pursuant to the Hazardous Materials Transportation Act, 49 U.S.C. Appendix

Section 1801 et seq. The term includes materials designated as hazardous materials under the provisions in 49 CFR 173. EPA designated hazardous wastes are also hazardous materials.

1.2.2 Hazardous Waste

A waste which meets criteria established in RCRA or specified by the EPA in 40 CFR 261 or which has been designated as hazardous by a RCRA authorized state program.

1.2.3 TSCA Waste

A waste that meets the description of Toxic Substances Control Act (TSCA) waste as a result of total polychlorinated biphenyl (PCB) content of 50 milligrams per kilogram.

1.3 SUBMITTALS

The following shall be submitted in accordance with Section 01 33 00 Submittals:

1.3.1 Product Data

Notices of non-compliance or notices of violation, as specified.

1.3.2 Test Reports

Information necessary to file state annual or EPA biennial reports for all hazardous waste transported, treated, stored, or disposed of under this contract. The Subcontractor shall not forward these data directly to the regulatory agency but to the Engineer at the specified time. The submittal shall contain all the information necessary for filing of the formal reports in the form and format required by the governing Federal or state regulatory agency. A cover letter shall accompany the data to include the contract number, Subcontractor name, and project location.

1.3.3 Spill Response

In the event of a spill or release of a hazardous substance (as designated in 40 CFR 302), or pollutant or contaminant, or oil (as governed by the Oil Pollution Act (OPA), 33 U.S.C. 2701 et seq.), the Subcontractor shall notify the Engineer immediately. If the spill exceeds a reporting threshold, the Subcontractor shall follow the pre-established procedures for immediate reporting to the Engineer.

1.3.4 Certificates

a. Transportation and Disposal Coordinator

If hazardous wastes are transported, provide Transportation and Disposal Coordinator qualifications including proof of at least one year specialized experience in management and transportation of hazardous wastes; and proof of

current Department of Transportation Hazardous Materials Training Certification.

b. Training

If hazardous wastes are transported, provide documentation that employees preparing or transporting hazardous materials have been trained, tested, and certified per 49 CFR 172, Subpart H, including general security awareness requirements and where applicable, site-specific security plan requirements.

c. Certificates of Disposal

If hazardous or TSCA wastes are transported, provide certificates documenting the ultimate disposal, destruction or placement of wastes within 21 days of initial shipment. Receipt of these certificates will be required for final payment.

d. Shipping Documents and Packaging Certification

Submit to the Engineer all transportation-related shipping documents including draft waste manifests, draft land disposal restriction notifications, draft bill of ladings, lists of corresponding proposed labels, packages, marks, and placards to be used for shipment, waste profiles, supporting waste analysis documents, for review a minimum of 14 days prior to anticipated pickup. Packaging assurances shall be furnished prior to transporting hazardous material; "generator copies" of hazardous waste manifests, land disposal restriction notifications, used oil invoices/shipment records, bill of ladings, supporting waste analysis documents shall be furnished when shipments are originated; and "receipt copies" of waste manifests at the designated disposal facility shall be furnished not later than 35 days after acceptance of the shipment.

1.4 DESCRIPTION OF WORK

This section covers transport of hazardous, TSCA and nonhazardous materials (including waste), and waste disposal.

1.4.1 Transport any materials deemed to be hazardous in accordance with this section.

1.4.2 Transport and dispose of all waste generated on site at a facility or facilities licensed to accept such waste.

1.4.3 Comply with all Federal, State, and local regulations pertaining to transportation and disposal.

1.5 RELATED WORK DESCRIBED ELSEWHERE

Not used.

1.6 QUALIFICATIONS

1.6.1 Transportation and Disposal Coordinator

The Subcontractor shall designate, by position and title, one person to act as the Transportation and Disposal Coordinator (TDC) for this contract. The TDC shall serve as the single point of contact for all environmental regulatory matters and shall have overall responsibility for total environmental compliance at the site including, but not limited to, accurate identification and classification of waste; determination of proper shipping names; identification of marking, labeling, packaging and placarding requirements; completion of waste profiles, hazardous waste manifests, bill of ladings, exception and discrepancy reports; and all other environmental documentation.

1.6.2 Training

The Subcontractor's waste-handling employees shall be trained, tested, and certified to safely and effectively carry out their assigned duties in accordance with the Construction Health and Safety Plan.

1.6.3 Certification

The Subcontractor and/or subcontractors transporting waste shall possess a current certificate of registration issued by the U.S. Department of Transportation.

1.7 LAWS AND REGULATIONS REQUIREMENTS

Work shall meet or exceed the minimum requirements established by Federal, State, and local laws and regulations which are applicable. These requirements are amended frequently and the Subcontractor shall be responsible for complying with amendments as they become effective. In the event that compliance exceeds the scope of work or conflicts with specific requirements of the contract, the Subcontractor shall notify the Engineer immediately.

1.8 MEASUREMENT AND PAYMENT

The Subcontractor will be paid for transportation and disposal of the TSCA and nonhazardous excavation waste as part of the excavation unit prices. There will be no separate payment for transportation and disposal of excavation materials. Cost of transportation and disposal for such materials will be considered incidental to the work. Disposal of other trash and debris will be incident to the demobilization cost and will be paid for under that bid item.

2. PRODUCTS

2.1 MATERIALS

The Subcontractor shall provide all of the materials required for the packaging, labeling, marking, placarding, and transportation of hazardous wastes and hazardous materials and TSCA materials in conformance with Department of Transportation standards. Details in this specification shall not be construed as establishing the limits of the Subcontractor's responsibility.

2.1.1 Packaging

The Subcontractor shall provide bulk and non-bulk containers for packaging materials/wastes according to their classification.

If hazardous, packaging shall be consistent with the authorizations referenced in the Hazardous Materials Table in 49 CFR 172, Section .101, Column 8. Bulk and non-bulk packaging shall meet the corresponding specifications in 49 CFR 173 referenced in the Hazardous Materials Table, 49 CFR 172, Section .101. Each packaging shall conform to the general packaging requirements of Subpart B of 49 CFR 173, to the requirements of 49 CFR 178 at the specified packing group performance level, to the requirements of special provisions of column 7 of the Hazardous Materials Table in 49 CFR 172, Section.101, and shall be compatible with the material to be packaged as required by 40 CFR 262.

The Subcontractor shall also provide other packaging related materials such as materials used to cushion or fill voids in overpacked containers, etc. Sorbent materials shall not be capable of reacting dangerously with, being decomposed by, or being ignited by the hazardous materials being packaged. Additionally, sorbents used to treat free liquids to be disposed of in landfills shall be non-biodegradable as specified in 40 CFR 264, Section .314.

2.1.2 Markings

The Subcontractor shall provide appropriate markings for each material/waste package, freight container, and transport vehicle consistent with the requirements of 49 CFR 173. Markings shall be capable of withstanding, without deterioration or substantial color change, a 180 day exposure to conditions reasonably expected to be encountered during container storage and transportation.

2.1.3 Labeling

If hazardous wastes are transported, the Subcontractor shall provide primary and subsidiary labels for materials/wastes consistent with the requirements in the Hazardous Materials Table in 49 CFR 172, Section .101, Column 6. Labels shall meet design specifications required by 49 CFR 172, Subpart E

2.1.4 Placards

For each off-site shipment of hazardous material/waste or TSCA material, the Subcontractor shall provide primary and subsidiary placards consistent with the requirements of 49 CFR 172, Subpart F. Placards shall be provided for each side and each end of bulk packaging, freight containers, transport vehicles, and rail cars requiring such placarding.

2.1.5 Spill Response Materials

The Subcontractor shall provide spill response materials including, but not limited to, containers, adsorbent, shovels, and personal protective equipment. Spill response materials shall be available at all times in which hazardous materials/wastes are being handled or transported. Spill response materials shall be compatible with the type of material being handled.

2.2 EQUIPMENT AND TOOLS

The Subcontractor shall provide miscellaneous equipment and tools necessary to handle hazardous materials and hazardous wastes in a safe and environmentally sound manner.

3. EXECUTION

3.1 GENERAL

3.1.1 Treatment, Storage, and/or Disposal Facility

The Subcontractor shall select a facility or facilities that are licensed to receive the classes of waste to be disposed of. The Subcontractor shall provide the Engineer with EPA or state ID numbers, names, locations, and telephone numbers of the facilities.

3.1.2 Transporter

The Subcontractor shall select a transporter or transporters that are licensed to transport the classes of waste to be disposed of. The Subcontractor shall provide the Engineer with DOT license numbers, names, locations, and telephone numbers of the transporters.

3.1.3 Truck Route

The Subcontractor shall comply with Federal, State, and local requirements in selecting truck routes. The Subcontractor shall show truck routes on a map and submit this map along with maps of approved truck routes from the appropriate authorities. The truck route must be approved by the Engineer.

3.1.4 Waste Characterization

The Subcontractor, shall evaluate, prior to shipment of any material off-site, whether the material is regulated as a hazardous waste in addition to being

regulated as a hazardous material; this shall be done for the purpose of determining proper shipping descriptions, marking requirements, etc.

The Subcontractor shall obtain waste acceptance criteria from each facility and work with the facility to design a waste sampling and analysis plan. The Subcontractor shall sample and characterize waste at a frequency agreed to by the facility and use methods approved by the facility to characterize the material. Comply with the Subcontractor's approved Waste Management Plan.

3.1.5 Decontamination

Tires of vehicles leaving the site shall be decontaminated to prevent tracking of mud or sand on public roads. Tires shall be decontaminated via pressure washing or other method subject to approval by the Engineer. Surfactants shall not be used.

3.1.6 Shipping Documents and Packaging Certification

Prior to shipment of any material off-site, the Subcontractor's TDC shall provide written certification to the Engineer that materials have been properly packaged, labeled, and marked in accordance with Department of Transportation and EPA requirements.

3.1.7 Waste Minimization

The Subcontractor shall minimize the generation of hazardous waste to the maximum extent practicable. The Subcontractor shall take all necessary precautions to avoid mixing clean materials and contaminated wastes. The Subcontractor shall identify and evaluate recycling and reclamation options as alternatives to land disposal.

3.1.8 Record Keeping

The Subcontractor shall be responsible for maintaining adequate records to support information provided to the Engineer regarding waste transportation and disposal. The Subcontractor shall be responsible for maintaining shipment records for a minimum of 3 years from the date of shipment or any longer period required by any applicable law or regulation or any other provision of this contract.

3.1.9 Spill Response

The Subcontractor shall clean-up any spills of materials or waste which are in the custody or care of the Subcontractor regardless of whether the spill occurs on or off site. Any direction from the Engineer concerning a spill or release shall not be considered a change under the contract. The Subcontractor shall comply with all applicable requirements of Federal, state, or local laws or regulations regarding any spill incident.

3.1.10 Waste Management Plan

Comply with the Subcontractor's approved Waste Management Plan.

3.2 TRANSPORTATION AND DISPOSAL OF EXCAVATION MATERIAL

Based on remedial actions performed in 2010 and 2011, excavation material is expected to be TSCA material (PCBs > 50 mg/kg) or SubTitle D soil (PCBs < 50 mg/kg).

3.2.1 Containers

Containers used to transport excavation material off site shall be suited to that type of waste. They shall be in good condition and free of leaks. Use liners and covers or other means approved by the Engineer to prevent dripping and spills during transportation. The Engineer may disallow use of containers that do not meet the requirements of this section.

3.2.2 Pre-Approval Certification

Obtain pre-approval certification from the designated disposal facility prior to transporting any waste to that facility. Submit pre-approval certificates to the Engineer.

3.2.3 Measurement

Obtain a weight ticket from the facility showing the weight of waste disposed of.

3.3 TRANSPORTATION AND DISPOSAL OF HAZARDOUS WASTE

3.3.1 Waste Classification

The Subcontractor shall identify waste codes based on requirements in 40 CFR 261 or any applicable state or local law or regulation. The Subcontractor shall also identify all applicable treatment standards in 40 CFR 268 and state land disposal restrictions and shall make a determination as to whether the waste meets or exceeds the standards. Waste profiles, analyses, classification, and treatment standards information shall be submitted to Engineer for review and approval.

3.3.2 Status of the Facility

Facilities receiving hazardous waste must be permitted in accordance with 40 CFR 270 or operating under interim status in accordance with 40 CFR 265 requirements, or must be permitted by a state authorized by the Environmental Protection Agency to administer the RCRA permit program.

3.3.3 Transportation

The Subcontractor shall use manifests for transporting hazardous wastes as required by 40 CFR 263 or any applicable state or local law or regulation.

Transportation shall comply with all requirements in the Department of Transportation referenced regulations in the 49 CFR series. The Subcontractor shall prepare hazardous waste manifests for each shipment of hazardous waste shipped off-site. Manifests shall be completed using instructions in 40 CFR 262, Subpart B and any applicable state or local law or regulation. Manifests and waste profiles shall be submitted to Engineer for review and approval. The Subcontractor shall prepare land disposal restriction notifications as required by 40 CFR 268 or any applicable state or local law or regulation for each shipment of hazardous waste. Notifications shall be submitted with the manifest to the Engineer for review and approval.

3.3.4 Treatment and Disposal of Hazardous Wastes

If hazardous waste is found, the hazardous waste shall be transported to an approved hazardous waste treatment, storage, or disposal facility within 90 days of the accumulation start date on each container. The Subcontractor shall ship hazardous wastes only to facilities which are properly permitted to accept the hazardous waste or operating under interim status.

End of Section 02 81 00

DIVISION 31
EARTHWORK

CONTENTS

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SECTION 31 11 00
CLEARING AND GRUBBING

SECTION 31 11 00

CLEARING AND GRUBBING

1. GENERAL

1.1 REFERENCES

Not used.

1.2 DEFINITIONS

Not used.

1.3 SUBMITTALS

Not used.

1.4 DESCRIPTION OF WORK

Clear and grub vegetation within the excavation footprint as shown on the drawings related to the Dune Area/Area 5 and to provide access for offsite dredging of the North Ditch. Avoid tree cutting to the extent practicable.

1.5 RELATED WORK DESCRIBED ELSEWHERE

Not used.

1.6 PROJECT CONDITIONS

1.6.1 Trees, Vegetation to Remain

Vegetation outside clearing and grubbing areas indicated on the drawings shall remain. However, limbs overhanging the excavation/dredging or cap areas may be trimmed as necessary for access and completion of the work. Trees in staging areas and temporary access roads shown on the drawings shall not be removed without written authorization by the Engineer. Temporary access roads shall be rerouted to preserve trees to the extent possible.

1.6.2 Prevent Damage to Improvements

Take all necessary measures to prevent damage to utilities and structures on site and on properties adjacent to the project. A high pressure gas main and a sanitary force main are present near the work area. Prevent damage to East and West Containment Cells.

1.7 DELIVERY, STORAGE, AND HANDLING

Deliver materials to store at the site, and handle in a manner which will maintain the materials in their original manufactured or fabricated condition until ready for use.

2. PRODUCTS (NOT USED)

3. EXECUTION

3.1 PROTECTION

3.1.1 Roads and Walks

Keep roads and walks free of dirt and debris at all times.

3.1.2 Trees, Shrubs, and Existing Facilities

Trees and vegetation to be left standing shall be protected from damage incident to clearing and grubbing by the erection of barriers or other means as the circumstances require.

3.1.3 Utility Lines

Locate utilities before commencing clearing and grubbing operations. Protect existing utility lines from damage. Notify the Engineer immediately of damage to or an encounter with an unknown existing utility line. The Subcontractor shall be responsible for the repairs of damage to existing utility lines. When utility lines are encountered within the area of operations, notify the Engineer in ample time to minimize interruption of the service.

3.1.4 Endangered Species

3.1.4.1 Possible threatened or endangered species include:
Blanding's Turtle
Piping Plover
St. John's Wart
Beach Maram Grass

3.1.4.2 Confine all activities to areas defined by the drawings and specifications. Do not remove, destroy, injure or disturb endangered species. If endangered species are observed in work area, stop work and immediately notify Engineer. Engineer will mark areas of known habitats of endangered species prior to commencement of site work. Additional areas will be marked by the Engineer as other habitats of endangered species become known during site activities.

3.1.5 East and West Containment Cells

3.1.5.1 Locate limits of containment cells before commencing with clearing and grubbing operations. Protect containment cells from damage. Notify the Engineer immediately of damage to or encounter with containment cell features. The Subcontractor shall be responsible for the repairs of damage to the containment cells. Refer to Canonie Environmental record drawings provided (for reference only).

3.2 SITE CLEARING

Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including downed timber (trees, limbs, and branches), snags, brush, and debris occurring within the areas to be cleared. Trees, stumps, roots, brush, and other vegetation in areas to be cleared as delineated in the design drawings shall be cut off flush with or below the original ground surface. Trees and vegetation outside of the delineated clear and grub area shall be left standing. Trees outside the cleared area that may inhibit construction and remediation processes may be trimmed of dead branches 1-1/2 inches or more in diameter. Limbs and branches to be trimmed shall be neatly cut close to the bole of the tree or main branches. Cuts more than 1-1/2 inches in diameter shall be painted with an approved tree-wound paint.

3.2.1 Removal of Trees, Stumps, and Vegetation

Where indicated or directed, trees, stumps that are designated as trees, and vegetation shall be removed from areas outside those areas designated for clearing and grubbing. This work shall include the felling of such trees and the removal of their stumps and roots as specified in paragraph 3.3 (GRUBBING). Trees, stumps, and vegetation shall be disposed of as specified in the paragraph 3.4 (DISPOSAL OF WASTE MATERIALS).

3.2.2 Debris Removal

Debris includes general garbage, tires, scrap metal, concrete, and other building material rubble. The work areas shall be cleared of all debris from staging areas and temporary access roads shown on the drawings. Subcontractor shall note all required debris removal during pre-bid site visit.

3.3 GRUBBING

Grubbing shall consist of the removal and disposal of stumps, roots larger than 3 inches in diameter, and matted roots from the designated grubbing areas or as required to complete the work. Material to be grubbed, together with logs and other organic or metallic debris not suitable for foundation purposes, shall be removed to a depth of not less than 18 inches below the original surface level of the ground in areas indicated to be cleared and grubbed and in areas indicated as construction areas under this contract, such as the excavation footprint and areas for temporary facilities.

3.4 DISPOSAL OF WASTE MATERIALS

3.4.1 Timber and Other Vegetation

All timber and other vegetation on the project site noted for clearing and grubbing shall become the property of the Subcontractor, and shall be removed from the site and disposed of in compliance with all Federal, State, and local regulations. Soil generated during grubbing will be sampled and characterized prior to disposal.

3.4.2 Concrete and Other Debris

All concrete and other debris including metal scrap, slag, and refuse shall be characterized and disposed of in accordance with Federal, State, and local regulations.

End of Section 31 11 00

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MATERIALS

SECTION 31 14 13

MATERIALS

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1.1.1 Sand Fill

1.1.2 Topsoil materials

1.1.3 Granular materials

1.1.4 Clay materials

1.1.5 Flexible membrane materials

1.1.6 Geotextile materials

1.2 RELATED SECTIONS

1.2.1 Section 01 45 00 - Quality Control: Testing soil fill materials.

1.2.2 Section 32 92 19 - Surface Restoration - Seeding

1.3 REFERENCES

1.3.1 ASTM D2487 - Classification of Soils for Engineering Purposes

1.3.2 ASTM D2922 - Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

1.3.3 ASTM D3017 - Standard Test Methods for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

1.3.4 ASTM D 5312 – Standard Test Method for Evaluation of Durability of Rock for Erosion Control Under Freezing and Thawing Conditions

1.3.5 ASTM D 6092 – Standard Practice for Specifying Standard Sizes of Stone for Erosion Control

2. MATERIALS

2.1 SOURCE QUALITY CONTROL

2.1.1 Gradation Tests

2.1.1.1 As necessary to locate acceptable sources of imported material.

2.1.1.2 Prior to delivering imported materials to the site, provide Engineer with one set of test results to show compliance with gradation requirements.

2.1.2 Chemical Analytical Tests

2.1.2.1 Provide to Engineer the analytical results of two samples for each source of imported material before brining imported material onsite. Analyses shall include the following:

a. Volatile organic compounds (VOC)
b. Semivolatile organic compounds (SVOC)
c. Total priority pollutant (TPP) metals
d. Polychlorinated biphenyls (PCB)
e. Pesticides
f. Herbicides

2.1.2.2 All chemical constituents shall meet the Tiered Approach to Corrective Action Objectives (TACO) Tier 1 remediation objectives for residential properties and for soil migration to the groundwater ingestion exposure route for Class I groundwater.

2.2 SAND FILL

2.2.1 Natural, not crushed, sand, free from clay.

2.2.2 Gradation as determined in accordance with ASTM C117 and C136

Sieve Size	Percent Passing by Weight
¼-inch	100
No. 8	95-100
No. 200	0-8

2.3 TOPSOIL

2.3.1 Well-graded natural soils, that include fine or coarse grained soils, clay, clayey sand, and other natural approved material. Topsoil must consist of natural loam, sandy loam, silty loam or clay loam humus-bearing soils adapted to the sustenance of plant life. Topsoil must be visually inspected for organic contamination and cleanliness by the Engineer. Topsoil must not be contaminated and may not be a mixture of natural underlying soils, sub-base materials, or other materials.

2.4 GRANULAR FILL

2.4.1 1-inch minus crushed gravel or crushed rock.

2.4.2 Free from dirt, clay balls, and organic matter.

2.4.3 Well graded from coarse to fine and containing sufficient fines to bind material when compacted, but with maximum 5 percent by weight passing No. 200 sieve.

2.5 CLAY MATERIAL

2.5.1 Low permeable soil, must be compacted and free from lumps, rocks, debris, rubbish, and roots. With an in-place saturated hydraulic conductivity of 1 x 10-7 cm/sec or less.

2.6 ROCK

2.6.1 Clean quarry crushed rock for protection of geotextile fabric installed in sediment cap area: Coarse Aggregate (CA) 3

2.7 GEOTEXTILE MATERIALS

2.7.1 Flexible geotextile membrane liner (FML) for soil consisting of a minimum 20 ml thickness meeting the design requirements for a TSCA compliant geotextile barrier as approved by the Engineer. The membrane material and seam specifications should meet or exceed those set by the National Sanitation Foundation Standard No. 54 (NSF, 1985).

2.7.2 Geotextile for installation over sediment shall be Reactive Core Mat® as manufactured by CETCO (or equivalent)

2.8 RECYCLED FILL

2.8.1 Granular fill shall be materials from site that have been crushed by the Subcontractor to 3 inches in diameter or less.

2.8.2 Sand Fill shall be material previously imported for use as sand backfill in dunes area that is determined to be not contaminated by Engineer.

3. EXECUTION

3.1 STOCKPILING

3.1.1 Stockpile materials on site at locations approved by Engineer.

3.1.2 Stockpile in sufficient quantities to met project schedule and requirements.

3.1.3 Separate differing materials with dividers or stockpile apart to prevent mixing.

3.1.4 Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

3.2 STOCKPILE CLEANUP

3.2.1 Remove stockpile, leave area in a clean and neat condition.

3.2.2 Grade site surface to prevent free standing surface water.

4. MEASUREMENT FOR PAYMENT

The work under this section will not be measured. The cost of all materials included in this section shall be included in the bid items on Section 00 41 00.

End of Section 31 14 13

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SECTION 31 23 00
EXCAVATION AND BACKFILLING

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1.1.1.2 Sediment excavation/dredging

1.1.2 Backfilling:

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1.1.2.2 Consolidation and compaction as scheduled.

1.1.3 TSCA Compliant Cap Installation

1.1.4 North Ditch Sediment Cap Installation

1.2 RELATED SECTIONS

1.2.1 Section 01 11 00 - Summary of Work

1.2.2 Section 01 20 00 - Application for Payment

1.2.3 Section 01 33 00 – Submittals

1.2.4 Section 01 45 00 - Quality Control

1.2.5 Section 01 50 00 - Construction Facilities and Temporary Controls

1.2.6 Section 31 14 13 - Materials

1.2.7 Section 31 11 00 - Clearing and Grubbing

1.3 REFERENCES

The following documents are applicable to this specification

- American Society for Testing and Materials (ASTM)

1.3.1 ASTM D698 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb Rammer and 12-inch Drop

1.3.2 ASTM D1556 - Test Method for Density of Soil in Place by the Sand-Cone Method.

1.3.3 ASTM D1557 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 10 lb Rammer and 18-inch Drop

1.3.4 ASTM D2922 - Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

1.3.5 ASTM D3017 - Test Methods for Moisture Content of Soil and Soil-Aggregate Mixtures.

- American Association of Highways and Transportation Officials (AASHTO) Standards

1.3.6 20CFR Section 1926.650, OSHA Regulations, Excavation and Trenching Operations

1.4 FIELD QUALITY CONTROL

1.4.1 Compaction testing will be performed in accordance with ASTM D2922.

1.4.2 Frequency of Tests: one/ 100 cubic yards

1.5 SCHEDULING

1.5.1 Schedule work under provision of Section 01 33 00.

1.5.2 Schedule work to avoid disruption to occupied buildings nearby.

1.5.3 Schedule work to avoid disruption of endangered species.

2. PRODUCTS AND MATERIALS

2.1 FILL MATERIALS

2.1.1 Sand fill: As specified in Section 31 14 13.

2.1.2 Topsoil: As specified in Section 31 14 13

2.1.3 Clay: As specified in Section 31 14 13

2.1.4 Recycled Sand: As specified in Section 31 14 13

2.2 GRANULAR MATERIALS

2.2.1 Granular Material: As specified in Section 31 14 13.

2.2.2 Rock Material: As specified in Section 31 14 13.

2.2.3 Recycled Granular Material: As specified in Section 31 14 13

2.3 GEOTEXTILE MATERIALS

2.3.1 Flexible Membrane: As specified in Section 31 14 13.

2.3.2 Geotextile: As specified in Section 31 14 13

3 EXECUTION

3.1 EXAMINATION

3.1.1 Verify site conditions and note subsurface irregularities affecting work under this section.

3.2 PREPARATION FOR EXCAVATION

3.2.1 Identify required lines, levels, contours and datum

3.2.2 Locate, identify, and protect utilities that remain, from damage.

3.2.3 Locate East Containment Cell limits.

3.2.4 Delineate excavation area in the field.

3.2.5 Protect plant life, lawns, and other features remaining as a portion of final landscaping.

3.2.6 Protect endangered species and their habitats.

3.2.7 Protect bench marks, existing structures, fences, sidewalks, paving, and curbs from excavation equipment and vehicular traffic. Repair any damage at no additional cost.

3.2.8 Protect clean material in areas backfilled during the removal action of 2006 from contamination during excavation activities.

3.2.9 Protect waterways from discharge exceeding site discharge criteria in accordance with Section 01 57 20.

3.3 PROTECTION

3.3.1 Protect excavations by methods required to prevent cave-in.

3.3.2 Protect excavations from loose soil falling into it

3.3.3 Protect bottom of excavations and soil adjacent to and beneath foundations from freezing.

3.3.4 Protect excavations from water.

3.3.5 Protect Eastern Containment Cell slurry wall and cap during execution of the work.

3.4 SURVEY

3.4.1 Subcontractor shall retain a professional land surveyor (the Surveyor) registered in the State of Illinois who shall perform surveying of final excavation, necessary for payment.

3.4.2 If not already established, the Surveyor shall establish one or more local benchmarks.

3.4.3 Accuracy of all control work shall be third order Class II as outlined in the FGDC Geospatial Positioning Standards, Part 4: Standards for Architecture, Engineering Constructions and Facility Management.

3.4.4 The following are minimum standards for accuracy of the work: Horizontal and vertical coordinates shall be accurate to within +/- 0.01 feet at each location.

3.4.5 Coordinates shall conform to the North American Datum of 1983 (NAD83) and elevations to the North American Vertical Datum of 1988 (NAVD88).

3.4.6 Engineer will provide pre-excavation survey.

3.4.7 The Surveyor shall perform a complete initial topographic survey of the off-site dunes area as shown on the drawings prior to any excavation work by the Subcontractor. The survey shall determine elevations to the nearest 0.1 foot.

3.4.8 The Surveyor shall conduct a post-excavation survey of the final excavation limits, once the Engineer has verified the completion of excavation through confirmatory sampling. The survey shall determine post-excavation elevations and limits to the nearest 0.1 feet.

3.4.9 The Surveyor shall conduct a post-backfill survey once backfilling has been complete. The survey shall determine post-backfill elevations and limits to the nearest 0.1 feet.

3.4.10 The Surveyor shall conduct a post-installation survey of the geotextile cap and anchor layers in the North Ditch once installation of each has been completed. The survey shall determine the geotextile cap elevations and limits to the nearest 0.1 feet In addition, the survey shall determine the anchor layer elevations and limits to the nearest 0.1 feet.

3.4.11 The Surveyor shall conduct a post-completion survey of each layer installed for the TSCA-compliant cap once installation has been completed. The survey shall determine each layer installation elevations and limits to the nearest 0.1 feet

3.5 DEWATERING OF DITCH

3.5.1 Design and install temporary coffer dam (or equivalent) system to allow dewatering of sediment excavation areas Cofferdam should consist of inert materials and result in minimal disturbance of sediment and adjacent areas during placement and removal. Cofferdam should be anchored sufficiently to prevent failure during sediment remediation.

3.5.2 Remove coffer dam system after completion of sediment excavation/dredging. Remove only after approval for removal obtained from Engineer.

3.5.3 Pump water and process through filter system to remove particulate matter. Pump the water to onsite location selected by the Engineer. Water will be tested by Engineer prior to pumping to determine if it meets site remediation objectives.

3.5.4 Maintain filter system to ensure proper operation with no excessive pressure buildup. Monitor filter system continuously. Change out filters as needed based on flow. Properly dispose of filter media in accordance with Section 02 81 00.

3.6 EXCAVATION OF SOIL

3.6.1 Excavate contaminated soil in areas to the design depth and no greater than groundwater table or to a depth of 5 feet below ground surface, whichever is less,, as shown on Drawings. Excavate to within vertical tolerance of plus or minus 0.2 feet.

3.6.2 Machine slope banks to angle of repose or less, until shored.

3.6.3 Grade top perimeter of excavation to prevent surface water from draining into excavation.

3.6.4 Notify Engineer of unexpected subsurface conditions and discontinue work in area until notified to resume work.

3.6.5 Stockpile excavated material on a liner on site in approved temporary storage area, or direct load into dump trucks for transportation for disposal. Subcontractor shall employ best management practices when stockpiling materials to minimize dust generation from operations, and to prevent erosion and stormwater runoff. Such best management practices shall include lining and berming of stockpiles and covering stockpiles at the end of each work day.

3.6.6 Once the initial excavation has been completed to the limits shown in the drawings and to a depth of 5 feet below ground surface in the dunes area, the Engineer will perform confirmatory sampling from the walls and floor of the excavation Subcontractor may be directed by Engineer to perform additional soil removal along the walls of the excavation based on the results of the confirmatory sampling. Dimensions of additional soil removal area will be determined by the Engineer. This will continue until confirmatory sampling shows that

contaminated soil has been removed. Subcontractor shall allow 36 hours from time of sample collection (not including weekends or holidays) for sample results to be received and Engineer's decision regarding the need for additional excavation to be made. The Subcontractor is responsible for schedule work around testing requirements. No compensation for down-time will be made.

3.6.7 After the Engineer determines that the confirmatory sampling shows that contaminated soil has been removed from the sidewalls and/or floor of the excavation, the excavation is considered complete.

3.7 EXCAVATION/DREDGING OF SEDIMENT

3.7.1 Prepare area for excavation/dredging.

3.7.2 Excavate/dredge to required depth.

3.8 BACKFILLING AND EAST CONTAINMENT CELL CAP EXTENSION INSTALLATION

3.8.1 Backfill areas to contours and elevations with unfrozen materials.

3.8.2 Backfill Dunes area with sand fill materials to final grade

3.8.2 Install topsoil on existing grass or gravel areas and on disturbed areas such as staging and stockpile areas. Topsoil shall be minimum 6-inches thick.

3.8.3 Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen or spongy subgrade surfaces.

3.8.4 Place and compact fill material in continuous layers not exceeding 12 inches compacted depth. Compact to not less than 95 percent of the maximum unit weight.

3.8.5 Employ a placement method that does not disturb or damage other work.

3.8.6 Maintain optimum moisture content of backfill materials to attain required compaction density.

3.8.7 Make gradual grade changes. Blend slope into level areas.

3.8.8 Remove surplus backfill materials from site.

3.8.9 Leave fill material stockpile areas free of excess fill materials.

3.9 TOLERANCES

3.9.1 Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.

3.10 TSCA-COMPLIANT CAP

3.10.1 Vegetative/Topsoil Layer

3.10.1.1 The vegetative layer of the TSCA cap shall consist of a vegetation layer to control erosion and a topsoil layer in accordance with Section 31 14 13. It shall be capable of supporting plant growth. The top soil cover shall have a minimum compacted thickness of 60 cm (24 inches). The cover must accommodate root systems of non-woody cover plantings.

3.10.1.2 The topsoil layer of the TSCA cap should be sloped to carry runoff away from the area, with final slop to be at least 3 percent to avoid pooling, and less than 5 percent to avoid erosion.

3.10.1.3 A drainage system should be installed at the northern, eastern, and southern edges to conduct runoff away from the East Containment Cell and its cap extension.

3.10.2 Drainage Layer

3.10.2.1 A drainage layer is required to reduce infiltration of water into the underlying low permeability layer.

3.10.2.2 Drainage layer to be constructed of Sand Fill per Section 31 14 13and must have a thickness of no less than 30 cm (12 inches) and a minimum hydraulic conductivity of 1x10-2 cm/sec..

3.10.2.3 Include a bottom slope of at least 2 percent after allowing for settlement.

3.10.2.4 Install a filter (granular or geotextile) placed above the drainage layer to minimize clogging due to fines infiltration from vegetated/topsoil layer.

3.11 FML

3.11.1 The FML shall be at least 20 mils thick.

3.11.2 It shall be installed with a minimum 2 percent slope after allowing for settlement.

3.11.3 It shall be installed to avoid stressed conditions by providing proper slack allowances for shrinkage during installation and prior to placement of the protective drainage layer.

3.12 LOW PERMEABILITY LAYER

3.12.1 A low permeability layer shall be installed and shall be at least 60 cm (24 inches)thick.

3.12.2 The low permeability layer shall be compacted and consist of materials with an in-place saturated hydraulic conductivity of 1 x 10-7 cm/sec or less.

3.12.3 The upper surface must have a minimum slope of 2 percent allowing for settlement.

3.13 ALTERNATIVE COMBINATION OF FML AND LOW PERMEABILITY LAYERS

3.13.1 Subcontractor may propose a combination of these two layers provided that combination provides equivalent protection and effectiveness. This alternative may reduce the depth profile of the installed cap and allow for easier installation.

3.14 NORTH DITCH SEDIMENT CAP

3.14.1 Prepare area for geotextile installation.

3.14.2 Install geotextile membrane and seal per manufacturer's specifications and in accordance with Section 31 14 13.

3.14.3 Install anchor layer consisting of CA3 granular material in accordance with Section 31 14 13.

3.15 PROTECTION OF FINISHED WORK

3.15.1 Protect finished Work.

3.15.2 Reshape and recompact fills subject to vehicular traffic.

3.16 COMPACTION

3.16.1 Fill Under Grass Areas: as specified under section 3.9

4. MEASUREMENT FOR PAYMENT

4.1 UNIT COST

The work under this section will be based on tons of material disposed of for excavation areas. The work under this section for TSCA-compliant cap and North Ditch liner will be based on tons of materials imported to site and used. Payment shall be considered full compensation for furnishing all labor, materials, tools, water, all testing required, and all other items and services required to complete the work as specified under this section.

End of Section 31 23 00

DIVISION 32
EXTERIOR IMPROVEMENTS

CONTENTS

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SECTION 32 30 00
SITE RESTORATION

SECTION 32 30 00

SITE RESTORATION

1. GENERAL

1.1 REFERENCES

Not used.

1.2 DEFINITIONS

1.2.1 Weeds

Include, but are not limited to, Phragmites, Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.2.2 Noxious Weeds

1.2.2.1 Harmful, undesirable, hard to control.

1.2.2.2 Include but are not limited to: Johnson Grass or Johnson Grass Crosses, Canadian Thistle, Quackgrass, Wild Garlic and Wild Onion, Bermuda Grass, Annual Blue Grass, Corn Cockle, Dodder, and Blindweed.

1.3 SUBMITTALS

The following shall be submitted in accordance with Section 01 33 00 Submittals:

1.3.1 Product Data

At least 10 days prior to seeding the Subcontractor shall provide for the approval of the Engineer, a written description of the seed mix to use for hydro seeding. The description shall include the following information:

a. Botanical and common name, percentage by weight, germination, and weed seed for each species

b. The estimated number of seeds per pound of each kind of seeds to be furnished

c. A statement attesting to the purity and germination of the seed

d. The name and location of seed supplier.

e. The origin and date of harvest of each of the various kinds of seed

Subcontractor shall list the equipment to be used for seeding and demonstrate that the equipment is calibrated for the required seeding rates.

1.3.2 Samples

Topsoil: At least 10 days prior to commencing transport to the site, submit test results confirming conformance with requirements in paragraph 2.2 of this specification.

1.3.3 Certificates

Fertilizer Certificate: At least 10 days prior to placing fertilizer, submit certificate confirming conformance with specification.

Erosion Control Material: At least 10 days prior to delivering erosion control material, submit manufacturer product data and delivery, handling, storage, installation, and repair methods.

1.4 DESCRIPTION OF WORK

Restore the site to initial conditions by removing all temporary facilities, re-grading disturbed areas, cleaning up areas damaged during remediation, re-vegetating areas where vegetation was either cleared or damaged, restore dunes area and native plantings, and re-vegetating gravel or bare soil areas within the site property.

1.5 QUALIFICATIONS

1.5.1 Seed vendor capable of providing adequate seed quality and quantities.

1.5.2 Fertilizer vendor capable of providing adequate fertilizer quality and quantities.

1.5.3 Planter specializing in planting and establishment of multiple acre grading and planting projects with 5 years documented experience.

1.6 REGULATORY REQUIREMENTS

Comply with regulatory agencies for fertilizer and herbicide composition.

1.7 DELIVERY, STORAGE, AND HANDLING

1.7.1 Deliver grass seed mixture in original sealed containers bearing seed Supplier's label and certificate indicating the content of species, grade, and mass. Seed in damaged packaging will be rejected. Remove from the site seed which has become wet, moldy, or otherwise damaged in transit or storage. Store seed in weatherproof enclosures.

1.7.2 Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

1.7.3 Deliver mulch and erosion control agent in moisture-proof containers showing manufacturer, content, and net weight (air dry).

1.7.4 Deliver erosion control blankets in a rolled mat form protected with an outer waterproof wrap bearing manufacturer's label indicating product name.

1.7.5 Store other materials in accordance with manufacturer's instructions and in a manner to prevent damage or deterioration.

1.8 MEASUREMENT AND PAYMENT

1.8.1

1.8.1 Payment for site restoration shall be made on contract-fixed lump sum and will be paid under Demobilization and site restoration bid item, as shown in Section 00 41 00 Bid Form.

1.8.2 Payment for East Containment Cell Cap Extension topsoil and seeding shall be made on the square foot basis and will be paid under "Extend Cap to East of East Containment Cell" bid item, as shown in Section 00 41 00 Bid Form.

1.8.3 There shall be no payment for any of the other work specified in this section.

2. PRODUCTS

2.1 SEED MIXTURE

2.1.1 Fresh, clean, new-crop seed harvested previous year complying with the tolerance for purity and germination established by Official Seed Analysis of North America; minimum germination of 75 percent and minimum purity of 97 percent; obtained from an approved seed house.

2.1.2 Weed Seed Content: Not over 0.25 percent and free of noxious weeds.

2.2 TOPSOIL

2.2.1 Imported topsoil materials shall be in accordance with Section 31 14 13 and 31 23 00.

2.2.2 Friable loam neither of heavy clay nor of very light sandy nature, capable of supporting growth of vegetation.

2.2.3 Reasonably free of roots, rocks, or lumps larger than 1 inch, weeds, vegetation, and seeds of noxious weeds.

2.2.4 Acidity Range (pH): 5.5 to 8.0, determined in accordance with ASTM D4972.

2.2.5 Containing minimum 3 percent and maximum 10 percent organic matter determined in accordance with ASTM D2974.

2.3 MULCH

2.3.1 Free of weeds and other foreign materials, free of growth or germination inhibiting ingredients; manufactured in such a manner that after addition and agitation in slurry tanks with water, the fibers in the material will become uniformly suspended to form a homogeneous slurry; dyed a suitable color to facilitate inspection of the placement of the material. When applied, should be capable of forming an absorptive mat, which will allow moisture to percolate into the underlying soil.

2.3.2 Consist of finely ground cellulose pulp derived from recycled newsprint and dyed green or another color approved by the Engineer. Fiber consistency shall be approximately 60 percent fine fiber with the balance being paper particles, 40 percent of which shall be a diameter of 1/8 inch minimum and ¼ inch maximum.

2.4 FERTILIZER

Granular form, dry, free flowing, and free from lumps. Recommended for grass, with 50 percent of the elements derived from organic sources; 10-20-20 with a minimum 25 percent slow release N (SCU).

2.5 WATER

Clean, fresh, and free of any contaminants and substances or matter which could inhibit germination and vigorous growth of grass.

2.6 EROSION CONTROL BLANKET

2.6.1 Of consistent thickness with an even fiber distribution and sewn together with a biodegradable or photodegradable jute mesh.

2.6.2 Consist of straw sewn together with biodegradable or photodegradable thread, and free of weeds and other foreign materials. Average mass: 7 ounces per sq yd minimum and 8 ounces per sq yd maximum. Supply blankets in rolls a minimum of 80 feet in length and 3 to 6.5 feet in width.

3. EXECUTION

3.1 REMOVAL OF TEMPORARY FACILITIES

Remove all temporary facilities installed by the Subcontractor including but not limited to:

- Utility connections
- Buried pipes and cables
- Temporary site access roads, if applicable
- Temporary structures
- Process equipment and appurtenances
- Pads constructed for staging, stockpiling, decontaminating or processing material

- Temporary fences

3.2 REGRADE AREAS DISTURBED BY CONSTRUCTION ACTIVITIES

3.2.1 Regrade areas such as those on which temporary facilities including roads and pads were constructed.

3.2.2 Regrade work areas disturbed by clearing and grubbing and remediation support activities.

3.3 CLEANUP AREAS CONTAMINATED DURING REMEDIATION

3.3.1 Inspect the site for evidence of spills of potentially contaminated material along access roads, in staging areas, and other places where spills could have occurred.

3.4 REVEGETATION - GENERAL

3.4.1 Areas to be re-vegetated

In general, re-vegetate areas that previously had vegetation that was intentionally removed (such as during clearing and grubbing) or was destroyed unintentionally during construction. Work with the Engineer to locate and identify areas to be re-vegetated. In addition, vegetate new topsoil as specified in the field by the Engineer.

In addition, revegetate portion of Area 5 previous excavation.

3.5 REVEGETATION – TSCA COMPLIANT CAP EXTENSION

3.5.1 No seed shall be sown during high winds, nor shall any seed be sown until a purity test has been completed for the seeds used.

3.5.2 Prior to seeding, areas where standing vegetation is longer than 3 inches shall be mowed to a height between 1 and 3 inches. The cut material shall not be windrowed or left in a lumpy or bunched condition.

3.5.3 Remove surface debris, roots, vegetation, lumps, and stones larger than 1 inch, weeds, undesirable plants and their roots.

3.5.4 Prepare subgrade to eliminate uneven areas and low spots. Maintain lines, levels, profiles, and contours. Make changes in grade gradual. Blend slopes into level areas.

3.5.5 On the same day immediately following seeding, cover seeded slopes where grade is steeper than 4H:1V with erosion control blankets to form a continuous mat. Provide cellular earth retention mats on slopes with final grades steeper than 2H:1V. Install products and anchor in accordance with manufacturer's instructions.

3.5.6 Start maintenance immediately after seeding. Maintain vegetative cover by watering, weeding, mowing, trimming, and other operations as required to establish a smooth, acceptable grassed surface, free of eroded or bare areas. Maintain seeded area for not less than 30 days to establish a stand that is acceptable to the Engineer. Vegetative cover will be accepted if:

a. Vegetative cover is properly established.

b. Turf is free of eroded, bare, or dead spots and 98 percent free of weeds.

c. No surface is visible when vegetative cover has been cut to a height of 4 to 5 inches.

3.5.7 Re-seed areas which show signs of bare spots.

3.5.8 To the extent possible, the Subcontractor shall use paved areas to move trucks and equipment around the site. Parking or maneuvering of machinery, stockpiling of materials, or any other use will not be allowed in any unpaved areas within 10 feet of the root zone of trees or plants that will not be removed.

3.6 DUNE RESTORATION

3.6.1 Before any excavation of the dunes area is conducted, Engineer will document the species and density of the plants in each area, using photographs as appropriate, and develop a Dunes Area Conditions Report describing these conditions. Engineer will provide a copy of the Dunes Area Conditions Report to the Subcontractor and will obtain Subcontractor's written acceptance of the Dunes Area Conditions Report. Meeting the existing conditions documented in this report will be the criteria for restoration after excavation is completed.

3.6.2 Subcontractor shall remove the existing plants for portions of the Dunes Area that will be impacted by excavation activities. These shall be set aside for replanting. Subcontractor shall be responsible for storage and maintenance of these plants until restoration in the Dunes Area is completed.

3.6.3 After excavation in the Dunes Area is completed and backfilled and approved by Engineer, restore the flora that existed as documented in the Dunes Area Conditions Report. Replant removed existing plants that were saved before excavation and provide new plants to ensure an initial density of 125 percent of what existed before excavation.

3.7 REPAIR DAMAGE TO PRE-EXISTING INFRASTRUCTURE

If the Subcontractor causes damage to any site infrastructure, the Subcontractor shall repair and restore the affected infrastructure to the satisfaction of the Engineer. There shall be no payment for this task.

3.8 GENERAL CLEANUP

Perform general cleanup in accordance with Section 01 74 00 Cleaning and Waste Management.

3.9 WASTE DISPOSAL

Dispose of all waste in compliance with Section 02 81 00 Transportation and Disposal of Nonhazardous and Hazardous Materials.

End of Section 32 30 00

9/15/2011 G:\GIS\852\167 OMC\mxd\Spec-2011\Fig1_SiteLocation.mxd m.banh

LEGEND

Site Location

N
W E
S

0 2,000 4,000 Feet

OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

FIGURE 1
SITE LOCATION

SulTRAC

9/15/2011 G:\GI\18521\67 OMC\mxd\Spec-0911\Fig2_PhaseIRemAction.mxd m.barh

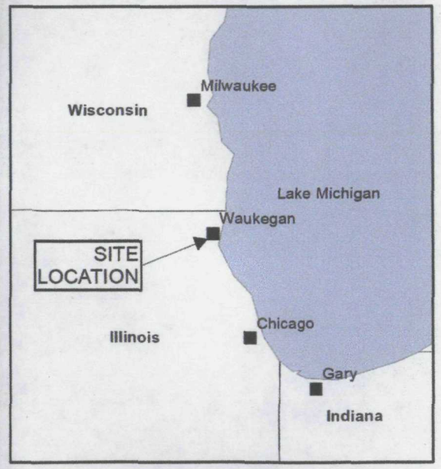
LEGEND

- Utility Corridor
- Remediation Complete
- Additional Remedial Action Required
- Remediation Complete - Backfilled
- Remediation Complete - Area To Be Backfilled With Crushed Concrete
- 50' x 50' Grids
- Fence

Note:
Scale of excavation and backfill approximate

N
W E
S

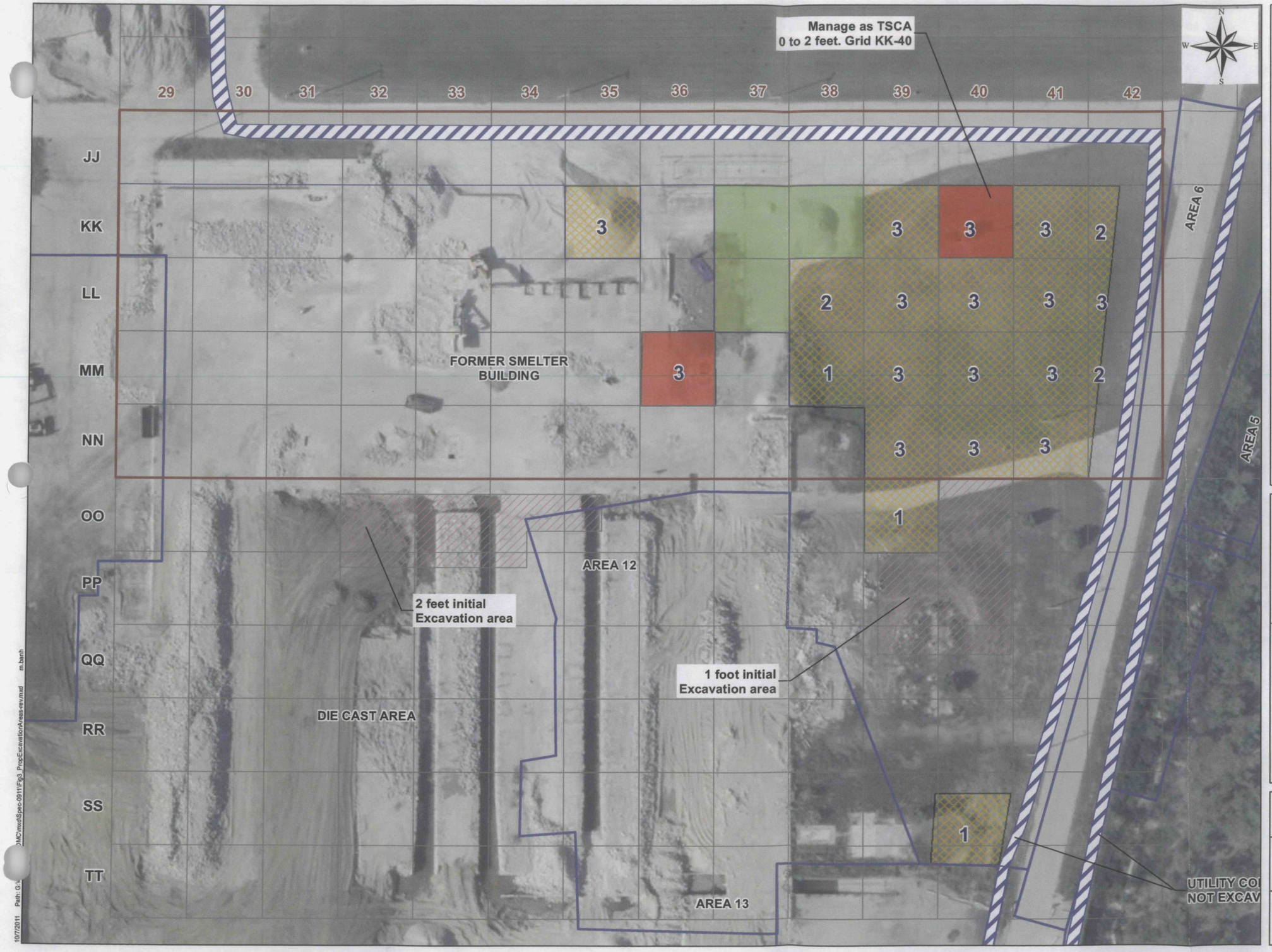
0 200 400 Feet



OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

FIGURE 2
STATUS OF PHASE I
REMEDIAL ACTION

SulTRAC



LEGEND

- 3 — Excavation Depth 3 Feet
- No Excavation Below ROs
- Targeted Excavation Area
- TSCA Area
- Estimated Excavation Area
- Previous Excavation Boundary
- Utility Corridor
- Investigation Area
- 50' x 50' Grids

0 50 100 Feet

OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

MODIFIED FIGURE 3
PROPOSED EXCAVATION AREAS

SulTRAC


LEGEND
Location Of Sediment Cap Installation
Utility Corridor
50' x 50' Grids
Fence
N
W
E
S
0
100
200
Feet
AREA 3
NORTH DITCH
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
EAST CONTAINMENT CELL
FORMER MANUFACTURING BUILDING (BLDG 1)
FORMER SMELTER BUILDING
TRIM BUILDING
UTILITY CORRIDOR NOT EXCAVATED
DUNES AREA
AREA 2
AREA 7
Image Source: Modified from ESRI World Imagery
Wisconsin
Milwaukee
Lake Michigan
Waukegan
SITE LOCATION
Illinois
Chicago
Gary
Indiana
9/15/2011 G:\G1852110\OMC\mxd\Spec-0911\Fig4-NorthDitchCappingArea.mxd m.banh
OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS
SulTRAC

FIGURE 4
NORTH DITCH CAPPING AREA

NSED 06
NSED 01
NSED 07
NSED 02
NSED 03
NSED 08
NSED 04
NSED 09
NSED 05

AREA 6

UTILITY CORRIDOR
NOT EXCAVATED

AREA 5

Image Source: Modified from ESRI World Imagery
Data Resource: Tetratech, START, PCB-Contaminated Soil Remediation Summery Report, June 1, 2006

9/15/2011 G:\GI\18521\o / OMCinvst\Spec-0911\Fig5-SedRemovalArea.mxd m.barh

LEGEND

DEIGAN AND ASSOCIATES SAMPLES (2004-2005)

- PCB > 1 mg/kg
- PCB < 1 mg/kg
- Sediment Removal Area
- East Sediment Containment Cell
- OMC Beachfront Property Boundary
- Previous Excavation Boundary
- Utility Corridor

N
W E
S

0 100 200 Feet

OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

FIGURE 5
OFF-SITE NORTH DITCH
SEDIMENT REMOVAL AREA

SulTRAC

41 42 43 44 45 46 47 48 49 50 51 52 53

N W E S

Manage as TSCA
0 to 2 feet. Grid EE-46

Manage as TSCA
0 to 4 feet. Grid EE-46

LITY CORRIDOR
OT EXCAVATED

AREA 5

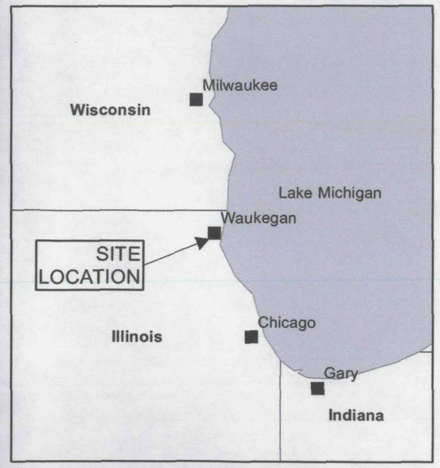
Image Source: Modified from ESRI World Imagery

10/7/2011 G:\G185...\mxd\Spec-0911\Fig6-DuneSoilRemArea-rev.mxd m.banh

LEGEND

- 4 — Excavation Depth 4 Feet
- No Excavation Below ROs
- Targeted Excavation Area
- TSCA Area
- Previous Excavation Boundary
- Utility Corridor
- OMC Beachfront Property Boundary
- East Sediment Containment Cell
- 50' x 50' Grids

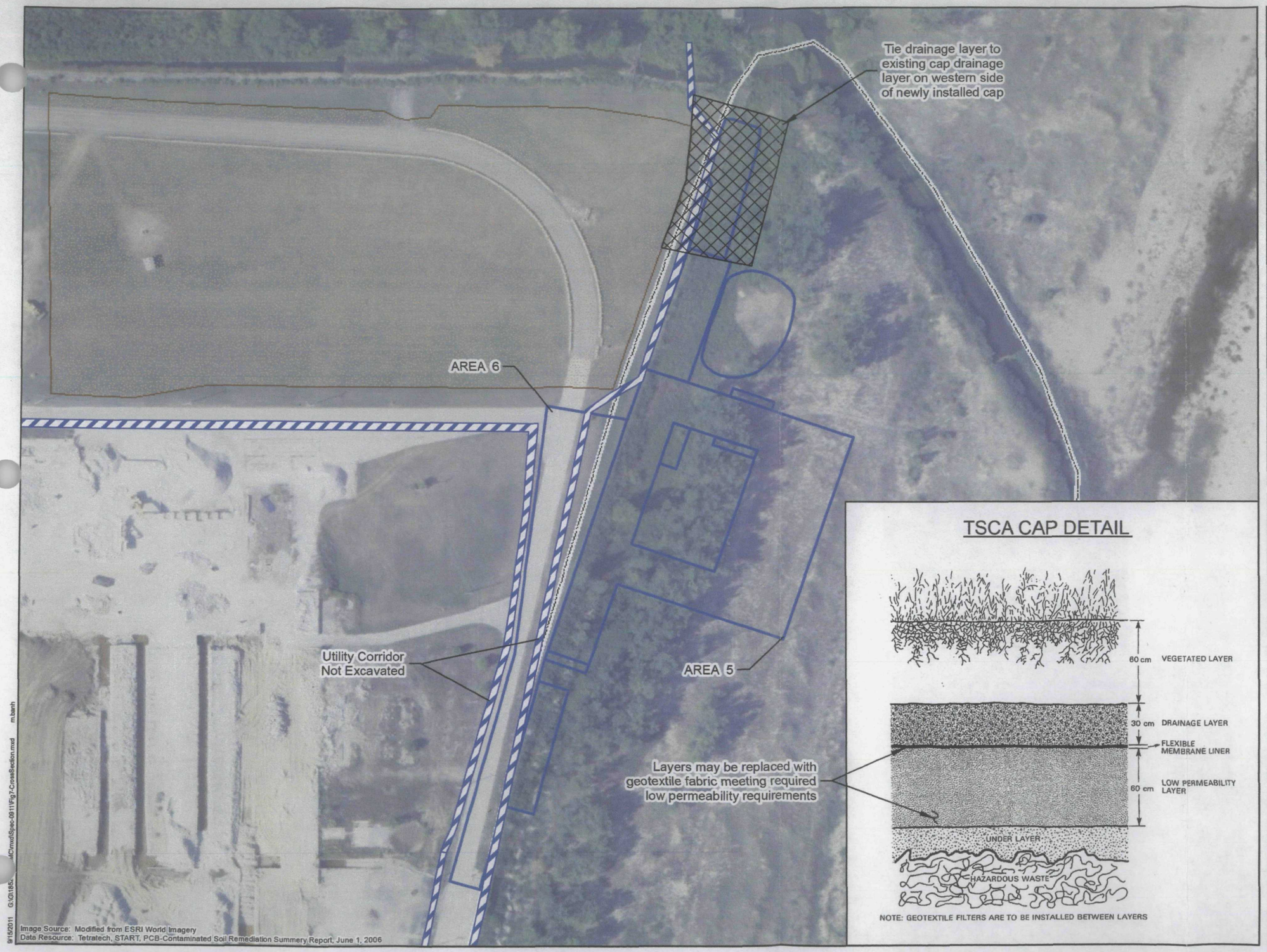
0 50 100 Feet



OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

MODIFIED FIGURE 6
DUNE SOIL REMEDIATION AREA

SulTRAC



9/15/2011 G:\GI\1852\...\MCmxd\Spec-0911\Fig7-CrossSection.mxd m.banh

TSCA CAP DETAIL

NOTE: GEOTEXTILE FILTERS ARE TO BE INSTALLED BETWEEN LAYERS

LEGEND

- OMC Beachfront Property Boundary
- East Sediment Containment Cell
- Previous Excavation Boundary
- Utility Corridor
- TSCA Cap To Be Installed For This Contract

N W E S

0 100 200 Feet

OMC PLANT 2 SITE
WAUKEGAN, ILLINOIS

FIGURE 7
EAST CAP EXTENSION LAYOUT AND CROSS SECTION

SulTRAC

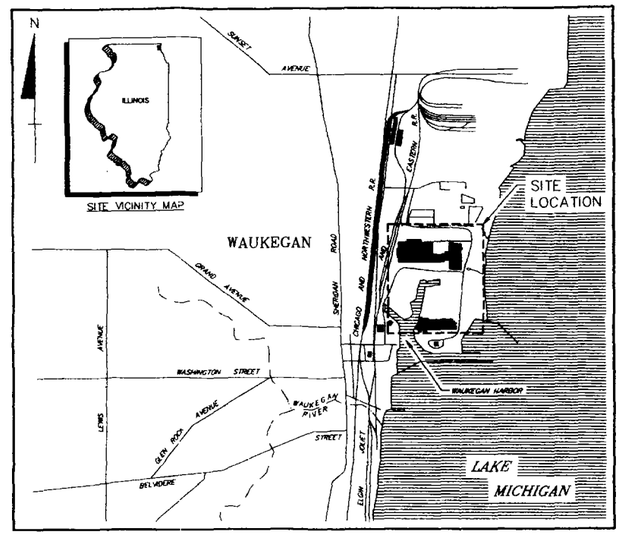
DRAWN BY	M_A_M	CHECKED BY	SLG	DRAWING NUMBER	87-126-E191
	2-3-90	APPROVED BY	CC		
			2-18-91		2-18-91

WAUKEGAN HARBOR REMEDIATION

WAUKEGAN HARBOR, WAUKEGAN, ILLINOIS

PREPARED FOR

WAUKEGAN HARBOR TRUST



SITE LOCATION MAP
NOT TO SCALE

SHEET NUMBER	DRAWING NUMBER	TITLE
MISCELLANEOUS		
M-1	87-126-E113	RECORD OF CONSTRUCTION SITE PLAN
M-2	87-126-E107	RECORD OF CONSTRUCTION TYPICAL COVER AND SWALE DETAILS
M-3	87-126-E183	RECORD OF CONSTRUCTION RECOVERY WELL, MONITORING WELL, AND PIEZOMETER DETAILS
SLIP No. 3 CONTAINMENT CELL		
S-1	87-126-E41	RECORD OF CONSTRUCTION SLURRY WALL ALIGNMENT, UTILITIES, AND PRECONSTRUCTION SURFACE CONTOURS SLIP No. 3 CONTAINMENT CELL
S-2	87-126-E84	RECORD OF CONSTRUCTION COVER PLAN SLIP No. 3 CONTAINMENT CELL
S-3	87-126-E102	RECORD OF CONSTRUCTION PLAN OF CUTOFF WALL SLIP No. 3 CONTAINMENT CELL
S-4	87-126-E82	RECORD OF CONSTRUCTION CUTOFF WALL SECTION SLIP No. 3 CONTAINMENT CELL
S-5	87-126-E150	RECORD OF CONSTRUCTION CUTOFF WALL NORTH CONNECTION DETAILS SLIP No. 3 CONTAINMENT CELL
S-6	87-126-E151	RECORD OF CONSTRUCTION CUTOFF WALL SOUTH CONNECTION DETAILS SLIP No. 3 CONTAINMENT CELL
S-7	87-126-E48	RECORD OF CONSTRUCTION SOIL PROFILE ALONG ℄ OF SLURRY WALL STATION 0+00 TO STATION 8+50 SLIP No. 3 CONTAINMENT CELL
S-8	87-126-E49	RECORD OF CONSTRUCTION SOIL PROFILE ALONG ℄ OF SLURRY WALL STATION 8+50 TO STATION 0+00/16+68.2 SLIP No. 3 CONTAINMENT CELL
S-9	87-126-E50	RECORD OF CONSTRUCTION CUTOFF WALL PROFILE SLIP No. 3 CONTAINMENT CELL
S-10	87-126-E260	RECORD OF CONSTRUCTION REROUTING OF THE SLIP No. 3 STORMWATER SYSTEM
WEST CONTAINMENT CELL		
W-1	87-126-E40	RECORD OF CONSTRUCTION SLURRY WALL ALIGNMENT WEST CONTAINMENT CELL
W-2	87-126-E73	RECORD OF CONSTRUCTION UTILITY LOCATION PLAN WEST CONTAINMENT CELL
W-3	87-126-E74	RECORD OF CONSTRUCTION COVER PLAN WEST CONTAINMENT CELL

SHEET NUMBER	DRAWING NUMBER	TITLE
WEST CONTAINMENT CELL (continued)		
W-4	87-126-E57	RECORD OF CONSTRUCTION LIMITS OF EXCAVATION WEST CONTAINMENT CELL
W-5	87-126-E104	RECORD OF CONSTRUCTION CRESCENT DITCH EXCAVATION PROFILES WEST CONTAINMENT CELL
W-6	87-126-E103	RECORD OF CONSTRUCTION OVAL LAGOON EXCAVATION PROFILES WEST CONTAINMENT CELL
W-7	87-126-E105	RECORD OF CONSTRUCTION SETTLING POND LOCATION PLAN WEST CONTAINMENT CELL
W-8	87-126-E44	RECORD OF CONSTRUCTION SOIL PROFILE ALONG ℄ OF SLURRY WALL STATION 5+23.9 TO STATION 13+00 WEST CONTAINMENT CELL
W-9	87-126-E45	RECORD OF CONSTRUCTION SOIL PROFILE ALONG ℄ OF SLURRY WALL STATION 13+00 TO STATION 5+23.9 WEST CONTAINMENT CELL
NORTH DITCH EXCAVATION		
N-1	87-126-E117	RECORD OF CONSTRUCTION NORTH DITCH EXCAVATION STATIONS E 0+00 TO E 9+00
N-2	87-126-E118	RECORD OF CONSTRUCTION NORTH DITCH EXCAVATION STATIONS E 9+00 TO E 19+00
N-3	87-126-E181	RECORD OF CONSTRUCTION NORTH DITCH EXCAVATION CROSS SECTIONS STATION 1+00, STATION 3+00, AND STATION 5+00
N-4	87-126-E180	RECORD OF CONSTRUCTION NORTH DITCH EXCAVATION CROSS SECTIONS STATION 7+00, STATION 9+00, AND STATION 11+00
N-5	87-126-E179	RECORD OF CONSTRUCTION NORTH DITCH EXCAVATION CROSS SECTIONS STATION 13+00, STATION 15+00, AND STATION 17+00
EAST CONTAINMENT CELL		
E-1	87-126-E64	RECORD OF CONSTRUCTION PRECONSTRUCTION SURFACE CONTOUR MAP EAST CONTAINMENT CELL
E-2	87-126-E39	RECORD OF CONSTRUCTION SLURRY WALL ALIGNMENT AND UTILITY LOCATION PLAN EAST CONTAINMENT CELL
E-3	87-126-E83	RECORD OF CONSTRUCTION COVER PLAN EAST CONTAINMENT CELL COVER
E-4	87-126-E42	RECORD OF CONSTRUCTION SOIL PROFILE ALONG ℄ OF SLURRY WALL STATION 0+00 TO STATION 10+40 EAST CONTAINMENT CELL

SHEET NUMBER	DRAWING NUMBER	TITLE
EAST CONTAINMENT CELL (continued)		
E-5	87-126-E43	RECORD OF CONSTRUCTION SOIL PROFILE ALONG ℄ OF SLURRY WALL STATION 10+40 TO STATION 0+00/21+15.8 EAST CONTAINMENT CELL
DREDGING		
D-1	87-126-E58	RECORD OF CONSTRUCTION MUCK AND SAND CONTOURS PRIOR TO DREDGING SLIP No. 3 AND UPPER HARBOR
D-2	87-126-E53	RECORD OF CONSTRUCTION UPPER HARBOR, LIMITS OF DREDGING
D-3	86-126-E54	RECORD OF CONSTRUCTION SELECT SOIL DREDGING, SLIP No. 3
D-4	87-126-E106	RECORD OF CONSTRUCTION AREA 'M' AND 'N' EXCAVATION PLAN SLIP No. 3 CONTAINMENT CELL
D-5	87-126-E108	RECORD OF CONSTRUCTION ROUTE OF SLIP No. 3 DREDGING PIPELINES
D-6	87-126-E60	RECORD OF CONSTRUCTION UPPER HARBOR, MUCK AND SAND PROFILES STATIONS S 0+00, S 0+30, AND S 1+25
D-7	87-126-E61	RECORD OF CONSTRUCTION UPPER HARBOR, MUCK AND SAND PROFILES STATIONS S 2+25, S 3+25, AND S 4+25
D-8	87-126-E62	RECORD OF CONSTRUCTION UPPER HARBOR, MUCK AND SAND PROFILES STATIONS S 5+25, S 6+25, AND S 7+25
D-9	87-126-E68	RECORD OF CONSTRUCTION UPPER HARBOR, MUCK AND SAND PROFILES STATIONS S 8+25 AND S 9+25
D-10	87-126-E69	RECORD OF CONSTRUCTION UPPER HARBOR, MUCK AND SAND PROFILES STATIONS S 9+75, S 10+25, AND S 10+75
D-11	87-126-E79	RECORD OF CONSTRUCTION SLIP No. 3, MUCK AND SAND PROFILES STATIONS E 0+00, E 0+70, E 1+50, E 2+25
D-12	87-126-E80	RECORD OF CONSTRUCTION SLIP No. 3, MUCK AND SAND PROFILES STATIONS E 2+40, E 3+00, AND E 3+25
D-13	87-126-E81	RECORD OF CONSTRUCTION SLIP No. 3, MUCK AND SAND PROFILES STATIONS E 3+75 AND E 4+00
D-14	87-126-E111	RECORD OF CONSTRUCTION SECTION A-A' AND SECTION B-B' SLIP No. 3 CONTAINMENT CELL

REFERENCES:
- USGS 7.5 MIN SERIES QUADRANGLE WAUKEGAN, ILL. 1960 PHOTOREVISED 1972 AND 1980
- USGS 7.5 MIN SERIES QUADRANGLE ZION, ILL.-WIS. 1960

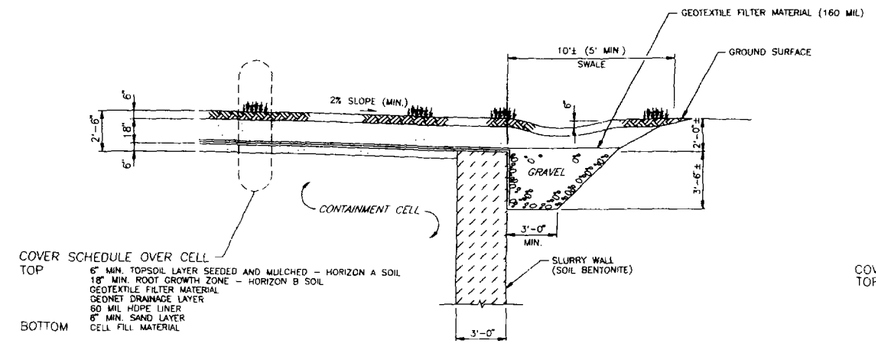
REVISIONS NO.	DATE	ISSUE / REVISION	DWN. BY	CK'D BY	AP'D BY
1	5-21-96	RECORD OF CONSTRUCTION	M_A_M	KWB	SD
0	2-15-91	ISSUED FOR CONSTRUCTION	G. Behnke	SLG	CC

RECORD OF CONSTRUCTION
TITLE SHEET
WAUKEGAN HARBOR REMEDIATION
WAUKEGAN HARBOR, WAUKEGAN, ILLINOIS
PREPARED FOR
WAUKEGAN HARBOR TRUST

CanonieEnvironmental

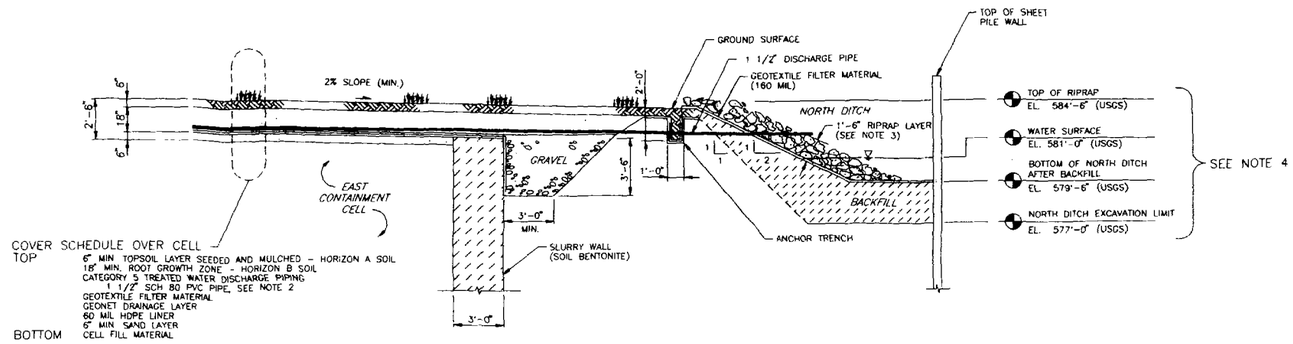
DATE:	2-3-90		DRAWING NUMBER	1
SCALE:	AS SHOWN		87-126-E191	

DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
DRE 9-25-89	SLG 2-18-91	CC 2-18-91	87-126-E107



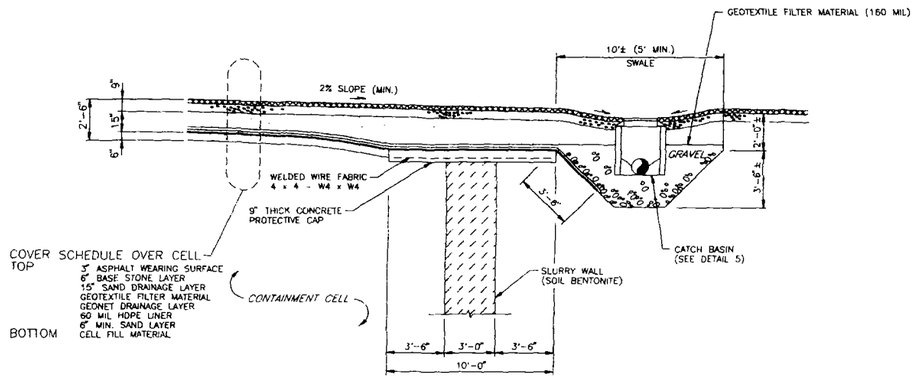
TYPE 'A'
VEGETATION COVER WITH SWALE

DETAIL 1



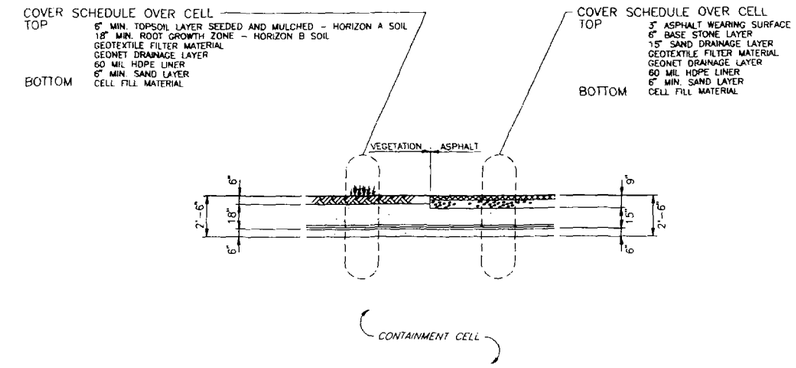
TYPE 'C'
VEGETATION COVER

DETAIL 3



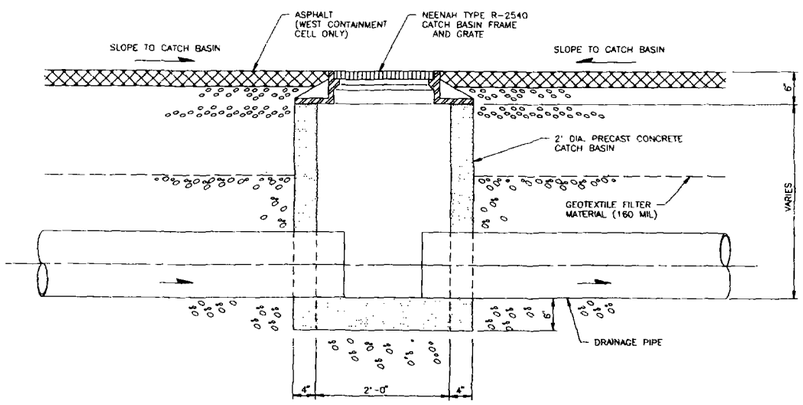
TYPE 'B'
ASPHALT COVER WITH SWALE

DETAIL 2



TYPICAL VEGETATIVE COVER/ASPHALT COVER INTERFACE

DETAIL 4



TYPICAL CATCH BASIN SECTION

DETAIL 5

SCALE: 1"=1'-0"

NOTES:

1. SEE DRAWINGS 87-126-E74, 87-126-E83, AND 87-126-E84 FOR DETAIL LOCATIONS.
2. CATEGORY 5 TREATED WATER DISCHARGE PIPING IS SLOPED TO PREVENT ACCUMULATION OF WATER IN PIPE.
3. THE 2x9 RIPRAP MEETS THE FOLLOWING GRADATION AND WEIGHT:

2x9 RIPRAP: SIZE	PERCENT
9"	100.0%
8"	73.5%
4 1/2"	36.0%
4"	20.0%
3"	2.5%
2 1/2"	1.0%

2x9 RIPRAP BY WEIGHT: SIZE	POUNDS/PIECE
9"	63 - 65
8"	18 - 20
4"	5 - 6
3"	2 - 3

4. ELEVATIONS ARE APPROXIMATE AND VARY OVER THE LENGTH OF THE NORTH DITCH.

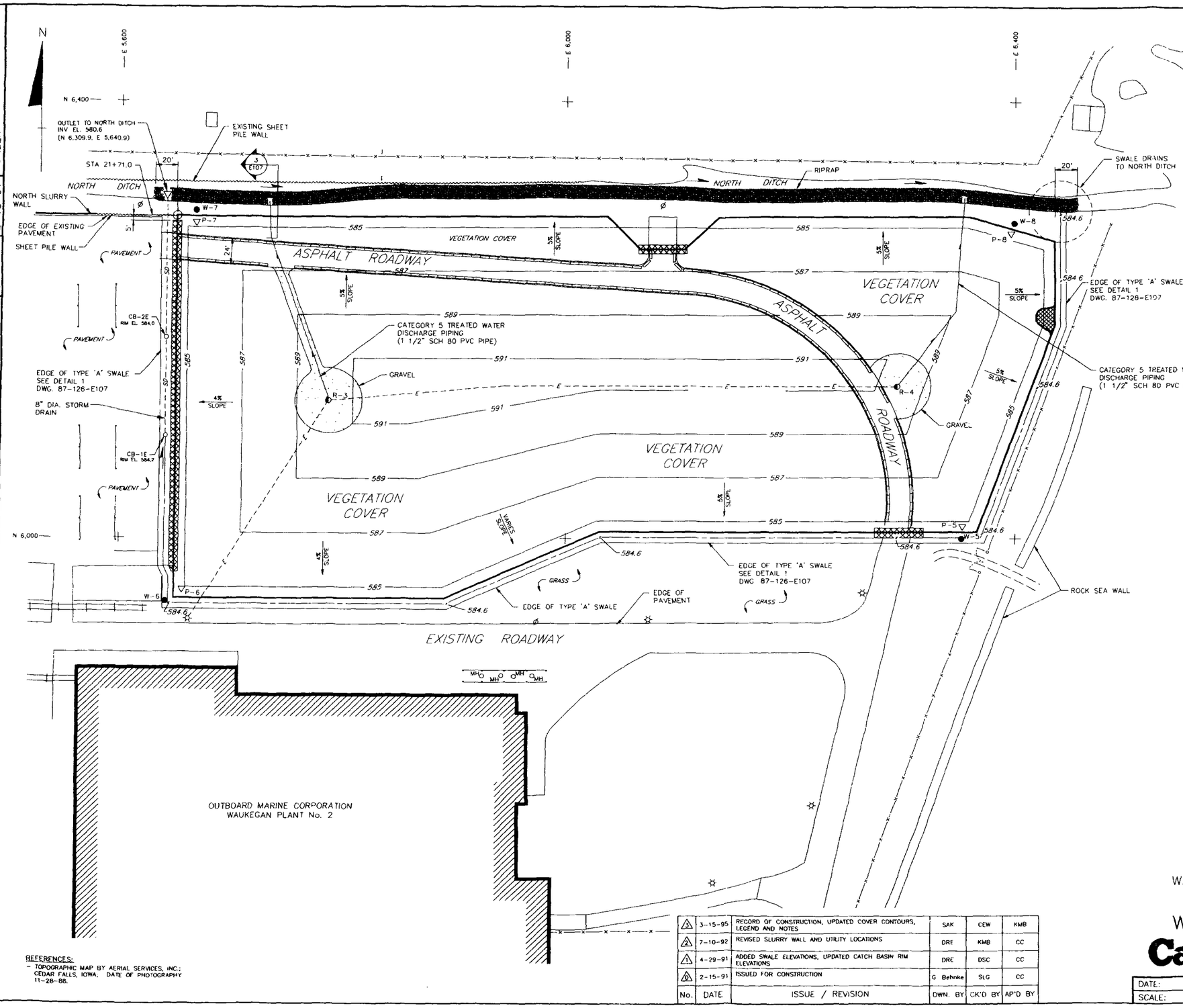
SCALE
4'-0" 0 4'-0" 8'-0" FEET

RECORD OF CONSTRUCTION
TYPICAL COVER AND SWALE DETAILS
WAUKEGAN HARBOR, WAUKEGAN, ILLINOIS
PREPARED FOR
WAUKEGAN HARBOR TRUST
CanonieEnvironmental

REVISIONS NO.	DATE	CONSTRUCTION ISSUE / REVISION	DWN. BY	CK'D BY	AP'D BY
1	5-24-96	RECORD OF CONSTRUCTION, UPDATED DETAIL 5 AND NOTES	M_A_M	KMB	SD
0	2-15-91	ISSUED FOR CONSTRUCTION	DRE	SLG	CC

DATE:	SCALE:	DRAWING NUMBER	
9-25-89	AS SHOWN	M-2	87-126-E107 1

DRAWING NUMBER	87-126-E83	
DRAWN BY	M_A_M	9-6-89
CHECKED BY	SLG	2-18-91
APPROVED BY	CC	2-18-91



LEGEND:

- FENCE
- UNIMPROVED ROADWAY
- RAILROAD
- GUARD RAIL
- ø UTILITY POLE
- LIGHT POLE
- DIRECTION OF SURFACE WATER FLOW (2)
- MH MANHOLE
- SLURRY WALL
- SLURRY WALL WITH PROTECTIVE CONCRETE CAP
- 585 COVER ELEVATION CONTOUR (USGS)
- CB CATCH BASIN
- R-4 RECOVERY WELL
- P-8 PIEZOMETER
- W-8 MONITORING WELL
- E POWER LINE (UNDERGROUND)
- 584.6 SURFACE SPOT ELEVATION
- CONCRETE BARRIERS

NOTES:

1. GROUND WATER FROM R-3 AND R-4 TO BE TREATED PRIOR TO DISCHARGE THROUGH THE TREATED WATER DISCHARGE PIPING LOCATED IN THE CELL COVER. THE DISCHARGE PIPING IS SLOPED TO PREVENT THE ACCUMULATION OF WATER.
2. GEOTEXTILE FABRIC (160 MIL) AND 2x90 STONE LAYER (1'-6" MIN. THICKNESS) WERE PLACED ON SOUTH SHORE OF NORTH DITCH ALONG EAST CONTAINMENT CELL SLURRY WALL. GEOTEXTILE FABRIC AND STONE WERE PLACED AFTER NORTH DITCH EXCAVATION AND BACKFILLING WAS COMPLETE SEE DWG 87-126-E107.
3. NO STRUCTURES ARE ALLOWED WITHIN THE LIMITS OF THE CONTAINMENT CELL

REFERENCES:
- TOPOGRAPHIC MAP BY AERIAL SERVICES, INC.; CEDAR FALLS, IOWA; DATE OF PHOTOGRAPHY 11-28-88.

NO.	DATE	ISSUE / REVISION	DWN. BY	CK'D BY	AP'D BY
3	3-15-95	RECORD OF CONSTRUCTION, UPDATED COVER CONTOURS, LEGEND AND NOTES	SAK	CEW	KMB
2	7-10-92	REVISED SLURRY WALL AND UTILITY LOCATIONS	DRE	KMB	CC
1	4-29-91	ADDED SWALE ELEVATIONS, UPDATED CATCH BASIN RIM ELEVATIONS	DRE	DSC	CC
0	2-15-91	ISSUED FOR CONSTRUCTION	G Behnke	SLG	CC

REVISIONS

SCALE
40 0 40 80 FEET

RECORD OF CONSTRUCTION COVER PLAN EAST CONTAINMENT CELL COVER WAUKEGAN HARBOR, WAUKEGAN, ILLINOIS

PREPARED FOR

WAUKEGAN HARBOR TRUST

Canonie Environmental

DATE: 9-6-89	E-3	DRAWING NUMBER 87-126-E83	3
SCALE: AS SHOWN			